

# Town of Corte Madera Emergency Operations Plan (EOP)



THE TOWN OF  
CORTE MADERA  
MARIN COUNTY CALIFORNIA

April 2009

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## **PART ONE: GENERAL INFORMATION**

### **THE PLAN**

The Town of Corte Madera Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with disasters affecting the Town of Corte Madera. The plan also addresses integration and coordination with other governmental agencies when required. This plan is not intended to address the normal day-to-day emergency or well-established emergency procedures.

This plan accomplishes the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting the Town of Corte Madera.
- Establishes the overall operational concepts associated with the Town of Corte Madera's Emergency Operations Center (EOC) activities and the recovery process

This plan is based on the functions and principles of the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the California Incident Command System (ICS). It identifies how the Town of Corte Madera emergency operational system fits into the overall California and national risk-based, all-hazard emergency response and recovery operations plan.

This document serves as a planning reference and as a basis for effective response to any hazard that threatens the Town of Corte Madera. Departments within the Town of Corte Madera and other agencies that have roles and responsibilities identified by this plan are encouraged to develop plans, detailed Standard Operating Procedures (SOPs), and emergency response checklists based on the provisions of this plan.

This document serves as the legal and conceptual framework for emergency management in the Town of Corte Madera and is divided into the following parts:

#### **Part 1 – General Information**

The "basic plan" which describes the emergency management organization, its roles, responsibilities, and operational concepts

#### **Part 2 – Threat Summaries and Assessments**

A general description of the Town of Corte Madera and a brief analysis of how hazards might affect the town

#### **Part 3 – References**

Authorities and References, Acronyms

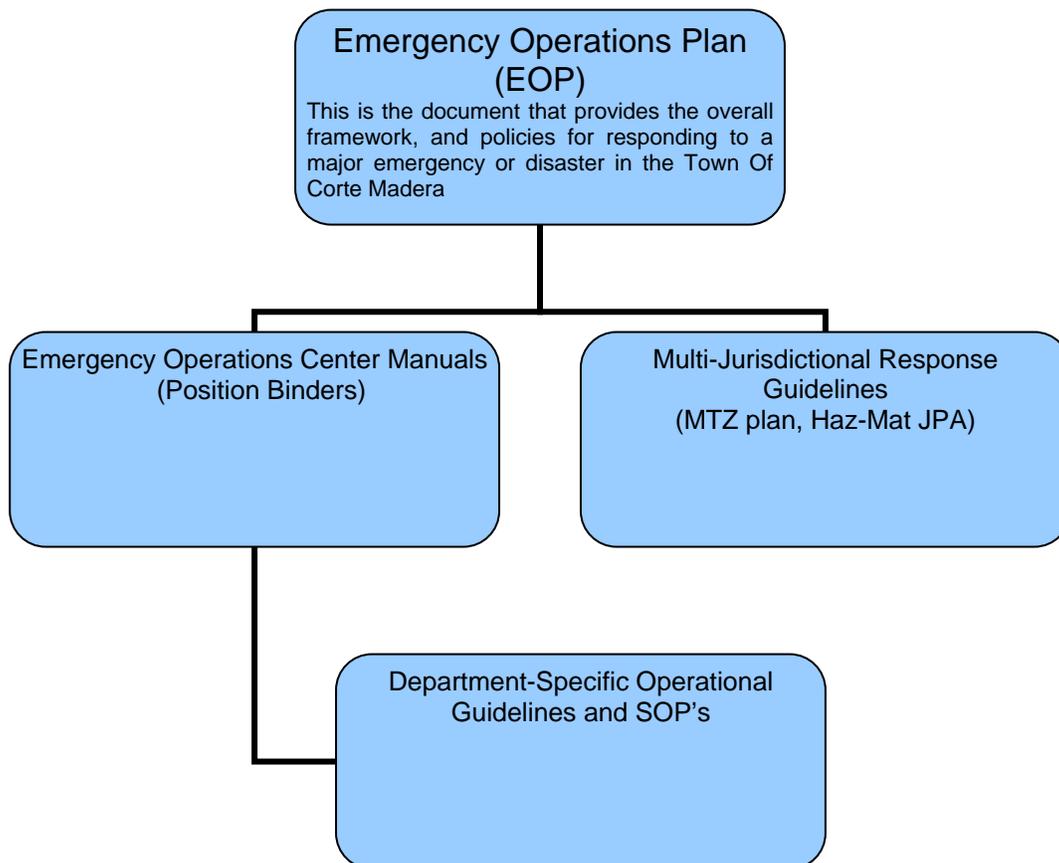
### Emergency Operations Plan Requirements

The Town of Corte Madera EOP requires approval by the town council, and will be signed by the mayor. The emergency operations manager is responsible for its periodic review, updates, re-publishing, and re-distribution. Records of revision to this plan will be maintained by the emergency operations manager. The plan may be modified as a result of post-incident analyses and/or post-exercise critiques. It may be modified if responsibilities, procedures, laws, rules, or regulations pertaining to emergency management and operations change. Those agencies or departments having assigned responsibilities under this plan are obligated to inform the emergency operations manager when changes need to be made.

Town departments, joint powers agencies and organizations, and special districts that operate within and/or under the control of the Town, in part or in whole, may separately publish documents that support this EOP. These include, but are not limited to, departmental operational guidelines and standard operational procedures developed by fire, public works, recreation, building and finance departments, and the Twin Cities Police Authority and Sanitary District #2.

### Emergency Operations Plans and Documents

Documents used to guide response to major emergencies and disasters are categorized by audience and scope. The following diagram illustrates how many such documents may be organized. This is not an all-inclusive list.



## **PURPOSE, OBJECTIVES, GOALS, ASSUMPTIONS**

### **Purpose**

This EOP establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the Town of Corte Madera. It provides information on the Town emergency management structure and how and when the EOC staff is activated.

### **Objectives**

The overall objective of emergency management is to ensure the effective management of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents, and national security emergencies. To carry out its responsibilities, the emergency management organization will accomplish the following objectives during a disaster/emergency:

- Maintain overall coordination of emergency response and recovery operations, including on-scene incident management as required
- Coordinate and liaise with appropriate other local government agencies, as well as applicable segments of private sector entities and volunteer agencies
- Establish priorities and resolve conflicting demands for support
- Prepare and disseminate emergency public information to alert, warn, and inform the public
- Disseminate damage information and other essential data

### **Goals**

- Provide effective life safety measures and reduce property loss and damage to the environment
- Provide for the rapid resumption of impacted businesses and community services
- Provide accurate documentation and records required for cost recovery efforts

### **Assumptions**

- The Town of Corte Madera is primarily responsible for emergency actions and will commit all available resources to save lives, minimize injury to persons, and minimize damage to property and the environment
- The Town of Corte Madera will utilize SEMS and NIMS in emergency response and management operations
- The emergency operations manager will coordinate the Town's disaster response in conformance with its Emergency Organization and Functions as per Chapter 2.32 of the Town Municipal Code, as amended by Ordinance No. 862.
- The resources of the Town of Corte Madera will be made available to local agencies and citizens to cope with disasters affecting this area
- The Town of Corte Madera will commit its resources to a reasonable degree before requesting mutual aid assistance
- Mutual aid assistance will be requested when disaster relief requirements exceed the Town's ability to meet them

## CONCEPT OF OPERATIONS

The emergency management organization in the Town of Corte Madera will identify potential threats to life, property, and the environment, and develop plans and procedures to protect those assets. These plans and procedures will direct emergency response and recovery activities and will be validated by the conduct of actual response or exercising. The goal is to maintain a robust emergency management organization with strong collaborative ties with other local government, community-based organizations and volunteers, public service agencies, and the private sector under SEMS/NIMS.

Actions are often categorized by the four emergency management phases indicated below. However, not every disaster necessarily includes all indicated phases.

### 1. Preparedness Phase

The preparedness phase involves activities taken in advance of an emergency. These activities develop operational capabilities and effective responses to a disaster. Preventative actions might include mitigation activities, emergency/disaster planning, training, exercises, and public education. Members of the emergency management organization should prepare Standard Operating Procedures (SOPs), Emergency Operating Procedures (EOPs), and checklists detailing personnel assignments, policies, notification rosters, and resource lists. Personnel should be acquainted with these SOPs, EOPs, and checklists through periodic training in the activation and execution procedures.

#### Training and Exercising

The emergency operations manager will inform Town departments of training opportunities associated with emergency management. Those with responsibilities under this plan must ensure their personnel are properly trained to carry out these responsibilities.

The best method of training emergency responders is through exercises. Exercises allow emergency responders to become familiar with the procedures, facilities, and systems that they will actually use in emergency situations.

Exercises will be conducted on a regular basis to maintain readiness. Exercises should include department heads, alternates, and support staff as possible. The emergency operations manager will document exercises by conducting a critique, and using the information obtained from the critique to complete an After Action Report (AAR) and to develop a Corrective Action Plan (CAP), revising standard operating procedures as necessary.

### 2. Response Phase

#### Pre-Emergency

When a disaster is inevitable, actions are precautionary and emphasize protection of life. Typical responses might be:

- Alerting necessary agencies and placing critical resources and personnel on stand-by
- Evacuation of threatened populations to safe areas

- Advising threatened populations of the emergency and apprising them of safety measures to be implemented
- Identifying the need for mutual aid
- Proclamation of a local emergency by local authorities

### **Emergency Response**

During this phase, emphasis is placed on saving lives and property, control of the situation, and minimizing the effects of the disaster. Immediate response is accomplished within the affected area by local government agencies and segments of the private sector.

### **Sustained Emergency**

In addition to continuing life and property protection operations, mass care, relocation, public information, and situation analysis, status and damage assessment operations will be initiated.

### **3. Recovery Phase**

At the onset of an emergency, actions are taken to enhance the effectiveness of recovery operations. Recovery is both short-term activities intended to return vital life-support systems to operation, and long-term activities designed to return infrastructure systems to pre-disaster conditions. Recovery also includes cost recovery activities.

The recovery period has major objectives which may overlap, including:

- Reinstatement of family and individuals' autonomy
- Provision of essential public services
- Permanent restoration of private and public property
- Identification of residual hazards
- Plans to mitigate future hazards
- Recovery of costs associated with response and recovery efforts
- Coordination of state and federal, private and public assistance

As the immediate threat to life, property, and the environment subsides, the rebuilding of Corte Madera will begin through various recovery activities. Recovery activities involve the restoration of services to the public and rebuilding the affected area(s). Examples of recovery activities include:

- Restoring all utilities
- Establishing and staffing local assistance centers and disaster assistance centers
- Applying for appropriate assistance programs
- Conducting hazard mitigation analysis
- Identifying residual hazards
- Determining recovery costs associated with response and recovery

### **4. Prevention/Mitigation Phase**

Preventing damage and losses from a disaster includes those efforts known as mitigation activities. Mitigation efforts occur both before and following disastrous events. Post-disaster mitigation is part of the recovery process. Preventing, eliminating, or reducing the impact of

hazards that exist within the Town of Corte Madera and are a threat to life and property are part of the mitigation efforts.

Mitigation tools include:

- Local ordinances and statutes (zoning ordinance, building codes and enforcement, etc.)
- Structural measures
- Tax levee
- Public information and community relations
- Land use planning

## **EMERGENCY MANAGEMENT ORGANIZATION & RESPONSIBILITIES**

### **Emergency Operations Manager**

The town manager will serve as the emergency operations manager

The emergency operations manager is supported by the assistant emergency operations manager and has overall responsibility for the following:

- Organizing, staffing, and operating the EOC
- Operating communications and warning systems
- Providing information and guidance to the public and elected officials
- Maintaining information on the status of resources, services, and operations
- Directing overall operations
- Identifying and analyzing potential hazards and recommending appropriate counter-measures
- Collecting, evaluating, and disseminating damage assessment and other essential information

### **The Town of Corte Madera Disaster Council**

The Town of Corte Madera Disaster Council serves as an advisory committee to the Town Council. The duty of the Corte Madera Disaster Council is to review and recommend for adoption by the Town Council, the Town of Corte Madera emergency operations plan, disaster-related mutual aid plans and agreements, and such ordinances, resolutions, and rules and regulations as are necessary to implement such plans and agreements. It shall also be the duty of the Disaster Council to assist Town staff in preparing the community to take action before, during, and after a disaster. (Ord. 862 § 4, 2001)

The Disaster Council is responsible for the following:

- Review and evaluate disaster preparedness progress in the public and private sectors and report these findings to the Town Council.
- Promote disaster preparedness through communication and education
- Harness the power of every resident through education and outreach, training, and volunteer service, to make their families, homes, and communities safer from natural and/or man-made disasters or emergencies

### **Disaster Council Membership**

The membership of this committee shall consist of the following:

- (1) A member of the Town Council, as appointed by the council, who shall be the chairperson (optional). An alternate councilmember shall also be appointed
- (2) The emergency operations manager, who shall be the vice chairperson
- (3) The assistant emergency operations manager
- (4) Staff members as identified by the Town Council, through Town resolution

- (5) Such representatives of civic, business, labor, veterans, professional, or other organizations having an official emergency responsibility, as may be appointed by the emergency operations manager, with the advice and consent of the Town Council, through Town resolution. (Ord. 862 § 3, 2001)

### **Marin County Operational Area Emergency Management**

When a disaster occurs and two or more of the county's local jurisdictions' EOCs (or at the request of one local jurisdiction) within the Marin County Operational Area (OA) are activated, the Operational Area EOC serves as the focal point for information transfer and supports requests by cities/towns such as Corte Madera.

### **SEMS and NIMS**

#### **Standardized Emergency Management System (SEMS)**

After the 1991 Oakland East Bay Hills Fire, State Senator Petris passed Senate Bill 1841 (SB1841) introducing the Standardized Emergency Management System (SEMS). Since 1994, SEMS has been required by Government Code Section 8607(a) for managing response to multi-agency and multi-jurisdiction emergencies in California. SEMS consists of five organizational levels that are activated as necessary: field response, local government, operational area, regional, and state.

SEMS has been used throughout the State of California to manage and coordinate any emergency response involving more than one agency or jurisdiction. Local governments must use SEMS to be eligible for reimbursement of their personnel-related costs under state disaster assistance programs. A local government under SEMS is a county, city/town, or special district. Special districts under SEMS are units of local government with authority or responsibility to own, operate, or maintain a project (as defined in California Code of Regulations 2900(s) for purposes of threat or incident assistance). This may include joint powers authority established under Section 6500 et seq. of the code.

Cities/towns are responsible for emergency response within their boundaries, although some cities contract for some municipal services from other agencies.

Special districts are primarily responsible during emergencies for restoration of services that they normally provide. They may also be responsible for safety of people at their facilities or on their property and for warning of hazards from their facilities or operations.

All local governments are responsible for coordinating with other local governments, the field response level, and the operational area. Local governments are also responsible for providing mutual aid within their capabilities.

#### **National Incident Management System (NIMS)**

In response to the September 11, 2001 attacks on the World Trade Center in New York City, the Pentagon, and Flight 93, President Bush issued Homeland Security Presidential Directive-5 (HSPD-5). Released on February 28, 2003, HSPD-5 directed the Secretary of the Office of Homeland Security (OHS) to develop and administer a National Incident Management System (NIMS). NIMS includes the following components:

- Command and Management, including the Incident Command System (ICS)
- Communications and Information Management
- Preparedness
- Resource Management
- Supporting Technologies
- Joint Information System (JIS)
- NIMS Management and Maintenance

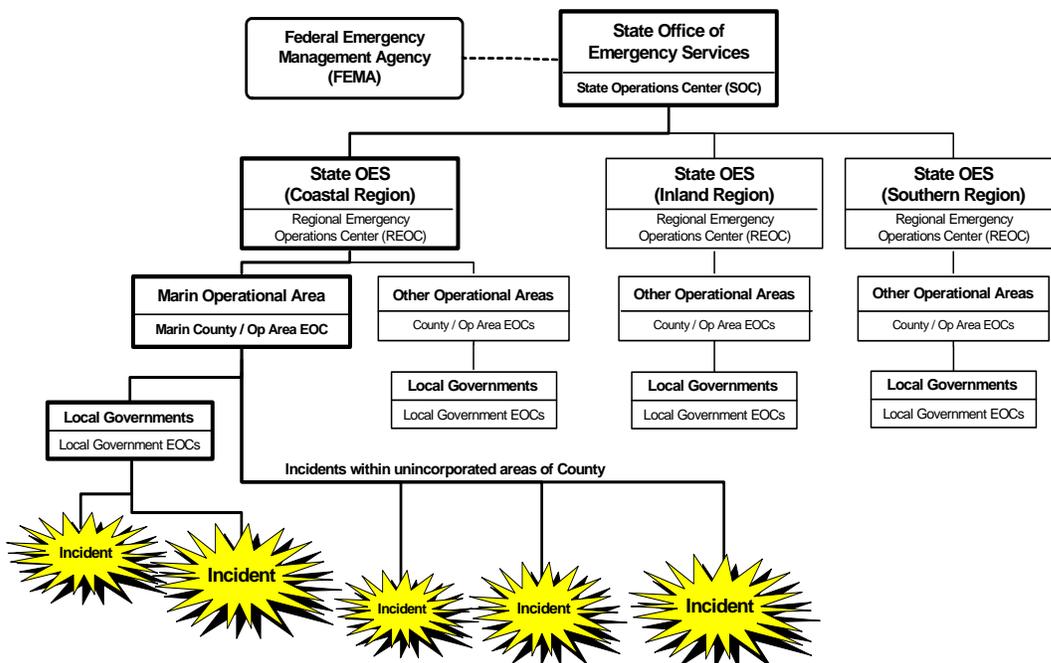
**Relationship to SEMS and NIMS:**

The Town of Corte Madera is responsible for emergency response within its geographical boundaries.

Under SEMS and NIMS, the Town has responsibilities at two levels: The field response and the local government level.

At the field response level, all agencies will use the Incident Command System (ICS) to standardize the emergency response.

At the Corte Madera local government level, the designated EOC is used as the central location for gathering and disseminating information, coordinating all jurisdictional emergency operations, and coordinating with the Marin County Office of Emergency Services (OES) and the Marin County Operational Area EOC level during events outside the scope of the Town of Corte Madera.



### **Organization Flexibility – Modular Organization**

The five essential ICS functions in SEMS and NIMS are identified as “sections” in the EOC. All other functions are organized as branches, groups or units within these sections. Only functional elements that are required to meet current objectives will be activated.

### **Management of Personnel - Hierarchy of Command and Span-of-Control**

Management of personnel within the EOC will be accomplished through the assignment of section chiefs for Operations, Planning/Intelligence, Logistics, and Finance/Administration functions. Section chiefs will report to the EOC director.

### **Multi-Agency or Inter-Agency Coordination**

Multi-agency or inter-agency coordination is important for establishing priorities for response and allocating critical resources. Strategies for handling multi-agency response problems need to be developed while jurisdictional and agencies’ objectives are not compromised. Town departments, special districts, volunteer agencies, and private organizations coordinate emergency response at the EOC. The Corte Madera EOC functions as the Multi-Agency Coordination Center (MACC) for most disaster-related incidents within its boundaries and will facilitate liaisons from affiliate districts and agencies, Marin Operational Area, and Town response resources as necessary.

### **EOC Action Plans**

At local, operational area, regional, and state levels, the use of EOC action plans provide designated personnel with knowledge of the objectives to be attained and the steps required for achievement. Action plans give direction and provide a basis for measuring achievement of objectives and overall system performance.

### **Special District Involvement**

Special districts are defined as local governments in SEMS/NIMS. The emergency response role of special districts is generally focused on the return to normal services. During disasters, some types of special districts may be more extensively involved in the emergency response by assisting other local governments when the disaster extends beyond Corte Madera.

Coordination and communications should be established among special districts that are involved in emergency response, other local governments, and the operational area. This may be accomplished in various ways depending on the local situation. Relationships among special districts, cities/towns, county government, and the OA are complicated by overlapping boundaries and by the multiplicity of special districts. Special districts need to work with the local governments, such as the Town of Corte Madera, in their service areas to determine how best to establish coordination and communication in emergencies.

When a special district is wholly contained within the city/town, the special district should have a liaison at the city/town EOC to provide direct support. An exception may occur when there are many special districts within the city/town.

When there are many special districts within a city/town, it may not be feasible for their EOC to accommodate representatives from all special districts during area-wide disasters. In such

cases, the city/town should work with the special districts to develop alternate ways of establishing coordination and communication.

The Town of Corte Madera recognizes its interdependency with special districts that will likely be directly involved in disaster response within the town. Although governed by separate boards, daily operations of these agencies are in part or in whole overseen by Town staff. These agencies include the Twin Cities Police Authority and Sanitary District #2

## **MUTUAL AID**

### **Introduction**

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with given situation(s). The basis for the system is the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided in the California Emergency Services Act. This agreement was developed in 1950 and has been adopted by the state, all 58 counties, and most incorporated cities in the State of California. The Master Mutual Aid Agreement creates a formal structure wherein each jurisdiction retains control of its own facilities, personnel, and resources, but may also receive or render assistance to other jurisdictions within the state. State government is obligated to provide available resources to assist local jurisdictions in emergencies. It is the responsibility of the local jurisdiction to negotiate, coordinate, and prepare mutual aid agreements.

Mutual aid agreements exist in:

- Law Enforcement
- Fire Services
- Medical
- Public Health
- Emergency Managers
- Hazardous Materials
- Public Utilities
- Engineers
- Coroner
- Others

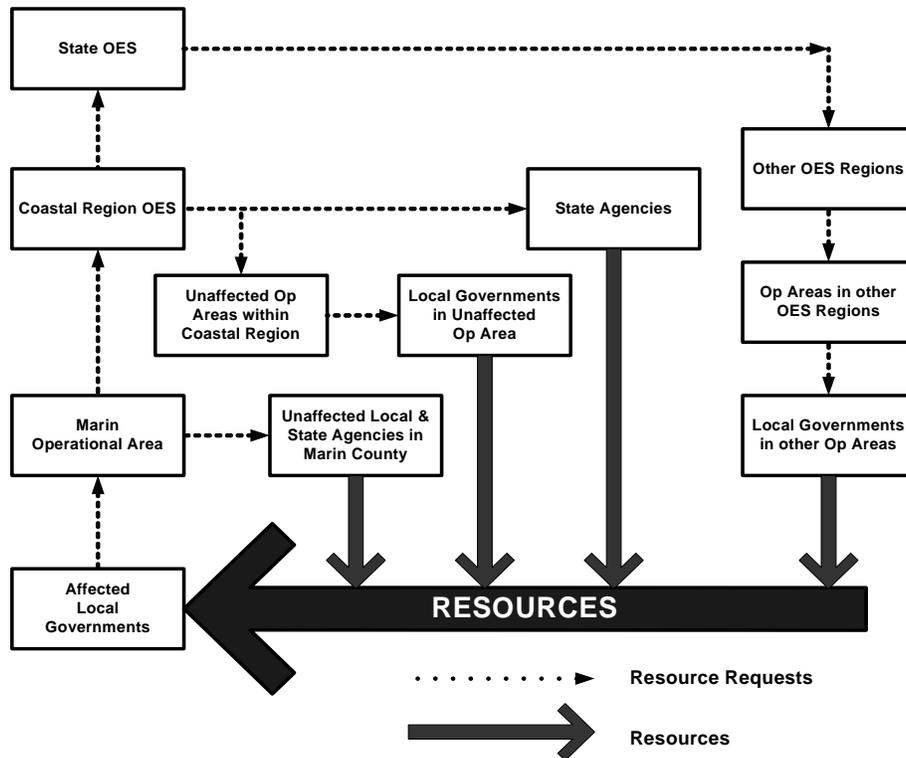
### **Mutual Aid System**

A statewide mutual aid system, operating within the framework of the Master Mutual Aid Agreement, allows for the progressive mobilization of resources to and from emergency response agencies, local governments, operational areas, regions, and state with the intent to provide requesting agencies with adequate resources.

The statewide mutual aid system includes several discipline-specific mutual aid systems, such as fire and rescue, law, medical, and public works. The adoption of SEMS does not alter existing mutual aid systems. These systems work through local government, operational area, regional, and state levels consistent with SEMS/NIMS and the Incident Command System (ICS). (Figure next page.) Mutual aid may also be obtained from other states. Interstate mutual

aid may be obtained through direct state-to-state contacts, pursuant to interstate agreements and compacts, or may be coordinated through federal agencies.

**Mutual Aid/Flow of Resource Requests (SEMS/NIMS/ICS)**



**Mutual Aid Coordinators**

To facilitate mutual aid, discipline-specific mutual aid systems work through designated mutual aid coordinators at the operational area, regional, and state levels. The basic role of a mutual aid coordinator is to receive mutual aid requests, coordinate the provision of resources from within the coordinator's geographic area of responsibility, and pass on unfilled requests to the next level.

Mutual aid requests that do not fall into one of the discipline-specific mutual aid systems are handled through the emergency services mutual aid system by emergency management staff at the local government, operational area, regional, and state levels.

Mutual aid coordinators may function from an EOC, their normal departmental location, or other locations, depending on the circumstances. Some incidents require mutual aid but do not necessitate activation of the affected local government or operational area EOCs because of the incident's limited impacts. In such cases, mutual aid coordinators typically handle requests from their normal work location. When EOCs are activated, all activated discipline-specific mutual aid systems should establish coordination and communications with the EOCs as follows:

### **Volunteer and Private Agencies in Mutual Aid**

Volunteer and private agencies may participate in the mutual aid system along with governmental agencies. For example, the disaster medical mutual aid system relies heavily on private sector involvement for medical/health resources. Some volunteer agencies such as the American Red Cross, Salvation Army, and others are an essential element of the statewide emergency response to meet the needs of disaster victims. Volunteer agencies mobilize volunteers and other resources through their own systems. They also may identify resource needs that are not met within their own systems that would be requested through the mutual aid system. Volunteer agencies with extensive involvement in the emergency response should be represented in EOCs.

Some private agencies have established mutual aid arrangements to assist other private agencies within their functional area. For example, electric and gas utilities have mutual aid agreements within their industry and established procedures for coordinating with governmental EOCs. In some functional areas, services are provided by a mix of special district, municipal, and private agencies. Mutual aid arrangements may include both governmental and private agencies.

A liaison should be established between activated EOCs and private agencies involved in a response. Where there is a need for extensive coordination and information exchange, private agencies should be represented in activated EOCs at the appropriate SEMS level.

Mutual aid will be provided and utilized in accordance with the California Master Mutual Aid Agreement. Requests for resources from outside the town should be coordinated through the EOC with agency/discipline-specific representatives for local events. During a proclaimed emergency, inter-jurisdictional mutual aid will be coordinated at the county, operational area, or mutual aid region level.

Requests for outside resources should include the following information:

- Number and type of personnel needed
- Type and amount of equipment needed
- Reporting time and location
- To whom forces should report
- Access routes
- Estimated duration of operations
- Risks and hazards

Following a major disaster, the Marin County Sheriff's OES can assist local governments with reimbursement procedures for response-related costs.

### **VOLUNTEER RESOURCES**

In response to disaster, management of resources requires integration of material, as well as personnel, into the existing emergency management system of the Town. Volunteer groups trained in emergency response can greatly enhance and supplement emergency response personnel. Personnel assigned to emergency response must be trained, equipped, and aligned with a qualified organization. Spontaneous volunteers, when trained and managed appropriately, can provide valuable resources to the community.

**Radio Amateur Civil Emergency Service (RACES/ACS)**

In Marin County, RACES is a part of the Marin County Sheriff's Office of Emergency Services. RACES/ACS members may provide communications support through use of various electronic means during a disaster. The Town of Corte Madera EOC maintains facilities and equipment specifically for use by RACES personnel to aid the EOC in outside communications. Additionally, the Town maintains equipment for use by RACES personnel located at Fire Station 13 on the east side of town. In the event of disaster, these communications stations may be utilized to provide response-related information from field forces to the EOC.

**Marin Medical Reserve Corps (MMRC)**

Marin County's Health and Human Services Division has created the Marin Medical Reserve Corps (MMRC) which enlists citizen volunteers to assist in the establishment of an organized pool of resources capable of being deployed to support emergency management systems already in place in the event of a major disaster. MMRC has developed a partnership within the Marin County medical profession (active and retired) that aid in the education, training, and deployment of citizen volunteers and resources in the event of a large scale, local emergency. MMRC will serve as a support role in providing volunteer medical professionals and resources to augment those services in the community that are engaged in the health and welfare of the citizenry. The town recognizes the value of identifying medical resources within the community prior to a disaster event, and is prepared to integrate these resources into the field response as available and as necessary, based on the actual event.

**Community Emergency Response Team (CERT)**

Following a major disaster, first responders who provide fire and medical services will not be able to meet the demand for these services. Factors such as the number of victims, communication failures, and road blockages will prevent people from accessing emergency services they have come to expect at a moment's notice through 911. The CERT program in Corte Madera presents citizens training with the facts about what to expect following a major disaster and also in life saving skills, with emphasis on decision-making skills and rescuer safety. It organizes teams so that certified CERT members are an extension of first responder services offering immediate help to victims until professional services arrive.

CERT includes education topics such as earthquake survival, fire prevention and suppression, search and rescue, disaster first aid, and general emergency preparedness. Corte Madera participates in the Central Marin CERT program for training purposes. Training includes facts about what to expect in the days following a disaster, also in life saving skills, with emphasis on decision-making skills and rescuer safety. Once initial training is completed, new members are referred to an organized CERT team within the town. These teams work in conjunction with professional responders in the event of disaster. Information on available CERT training and organization is available at Corte Madera fire stations.

**Get Ready Disaster Preparedness Program**

The Get Ready program was developed by the Tiburon Peninsula Disaster Preparedness Taskforce and has been provided to many town residents by the Get Ready 94925 organization. This two-hour program is outlined by the Federal Emergency Management Agency to teach citizens what to do when help is unavailable during emergencies and disasters. It is the intent

of the Town to train as many households and business representatives as possible, in order to reduce the impacts of disaster on our citizens.

### **Other Volunteer Resources**

The Town of Corte Madera maintains a list of citizens and businesses that may be called upon for use of their specialized training, professional skills, or resources in the following areas:

1. Structural engineers
2. Medical personnel
3. Medical professionals
4. Food preparation and services
5. Civil engineers
6. Licensed contractors
7. Clerical personnel
8. Material supplies

## **TOWN of CORTE MADERA EMERGENCY OPERATIONS CENTER (EOC)**

### **Introduction**

Day-to-day operations are conducted from departments and agencies that are widely dispersed throughout the town. An EOC is a location from which centralized emergency management can be performed during a major emergency or disaster. This facilitates a coordinated response by the emergency operations manager, emergency management staff, and representatives from organizations that are assigned emergency management responsibilities. The level of EOC staffing will vary with the specific emergency situation.

An EOC provides a central location of authority and information. It allows for face-to-face coordination among personnel who must make emergency decisions. The following functions are performed in the Town of Corte Madera EOC:

- Managing and coordinating emergency operations
- Receiving and disseminating warning information
- Developing emergency policies and procedures
- Collecting intelligence from, and disseminating information to, the various EOC representatives and, as appropriate, to county, other cities/towns, special districts, and political representatives
- Preparing intelligence/information summaries, situation reports, operational reports, and other reports as required
- Maintaining general and specific maps, information display boards, and other data pertaining to emergency operations
- Continuing analysis and evaluation of all data pertaining to emergency operations
- Directing, controlling, and coordinating, within established policy, the operational and logistical support of Town resources committed to the emergency
- Maintaining contact and coordination with support to disaster operations centers, other local government EOCs, and the Marin County Operational Area EOC
- Providing emergency information and instructions to the public, making official releases to the news media, and the scheduling of press conferences as necessary

### **EOC Location and Description**

The Town of Corte Madera EOC is located at Fire Station 14, 342 Tamalpais Drive.

The EOC is well supplied with a computer network, telephones, dedicated fax line, copy machines, televisions, county radio systems, and the local broadcast AM radio. A RACES station is located within the EOC. Status boards are available to aid in the collection and dissemination of information. Staffing pattern is SEMS based, and operational periods are determined during the initial stages of an event. The town manager (or other designated personnel) serves as the EOC director, with additional staff provided by department heads (or their alternates) and supporting agencies, including Twin Cities Police Authority.

### **Alternate EOC Location and Description**

The alternate EOC for the Town of Corte Madera is located at Twin Cities Police Station #1, 250 Doherty Drive, Larkspur. This is a joint EOC shared with the City of Larkspur, and also operates as the Departmental Operations Center for the Twin Cities Police Authority.

### **When to Activate the EOC:**

The Town EOC should be activated whenever a senior employee of a department, or the town manager, determines that two or more Town departments will be, or anticipate being, involved in an extended incident, or when an ongoing incident is anticipated to be long-term and require outside coordination or direction from the EOC. Examples include a major hazardous materials incident, civil disturbance, aircraft disaster, earthquake of significant magnitude, wildland fire, or severe weather conditions.

### **Who Can Activate the EOC:**

The following individuals, either acting as the EOC director or on behalf of the EOC director, or their appointed representatives (as referenced in Continuity of Government Lines of Succession), are authorized to activate the EOC:

Town manager or designee  
Fire chief or designee  
Police chief or designee

### **How to Activate the EOC:**

- Contact the Twin Cities Police Dispatch at 927-5150, and request that they make notification to department heads
- If the event occurs during business hours, phone notifications should be made directly through Town Hall
- If the event is overwhelming dispatch personnel, senior staff should be called directly by the individual initiating the EOC activation.

**Corte Madera EOC Activation Levels Examples**

Trigger Event/Situation	Activation Level	Staffing	Activities
Severe Weather Watch	Stand-By	None Limited to office or other location.	None EOC is configured; all systems ready.
Severe Weather or Tsunami Warning	Minimal	EOC Director EOC Coordinator Liaison Officer PIO and Deputy PIO Section Chiefs Law, Fire, Medical/Health, Situation Analysis, Personnel, Supply, Communications, IT Support	Situation analysis Public information Response coordination Resource coordination Liaison Logistics support Financial support
Significant incidents involving two or more cities			
Earthquake Advisory Level I			
Severe Weather or Tsunami Warning	Partial	All minimal level staff plus:  Branches and Units as appropriate to situation  Liaison/agency reps as appropriate	Situation analysis Public information Response coordination Resource coordination Liaison Logistics support Financial support
Earthquake with substantial damage reported			
Earthquake Advisory Level II or III			
Major wind or rain storm with damage			
Two or more large incidents involving two or more cities			
Wildfire affecting developed area			
Major scheduled event			
Incident involving large-scale or possible large-scale evacuations			
Major city or regional emergency - multiple areas with heavy resource involvement	Full	All positions  Liaison/agency reps as appropriate	Situation analysis Response coordination Resource coordination Logistics support Public information  Sustained Operations
Earthquake with severe damage			

**Earthquake advisory levels are defined as follows:**

Level I: An event where local resources are available and adequate. A local emergency may or may not be declared.

Level II: Requires mutual aid on a regional (multi-county) or statewide basis. A State of Emergency may be proclaimed and a Presidential Disaster Declaration may be requested.

Level III: An event for which massive amounts of resources from all levels of government and the private sector will be required.

## Status Boards

Because the EOC's major purpose is accumulating and sharing information to ensure coordinated and timely emergency response, status boards for tracking emergency activities will be made available for use in both the primary and alternate EOCs. All EOC sections must maintain display devices so that other sections can quickly comprehend what actions have been taken, what resources are available, and to track damage in the town. The Planning/Intelligence Section is responsible for coordinating the display of information. All display charts, boards, and materials are stored in the EOC.

At the onset of any disaster, a log will also be compiled for the duration of the emergency situation. Key disaster-related information will be recorded in the log, e.g., casualty information, health concerns, property damage, fire status, size of risk area, scope of the hazard to the public, number of evacuees, etc. The posting of the log is the responsibility of the Planning/Intelligence Section staff.

## Communications

Communications are provided for in the EOC by the Logistics Section and include:

- MERA – Marin Emergency Radio Authority voice radio system
- TENS – Telephone Emergency Notification System
- RACES/ACS – Countywide organization of over 120 amateur radio operators
- 1330 AM - Local broadcast radio
- RIMS – Response Information Management System
- EAS – Emergency Alert System

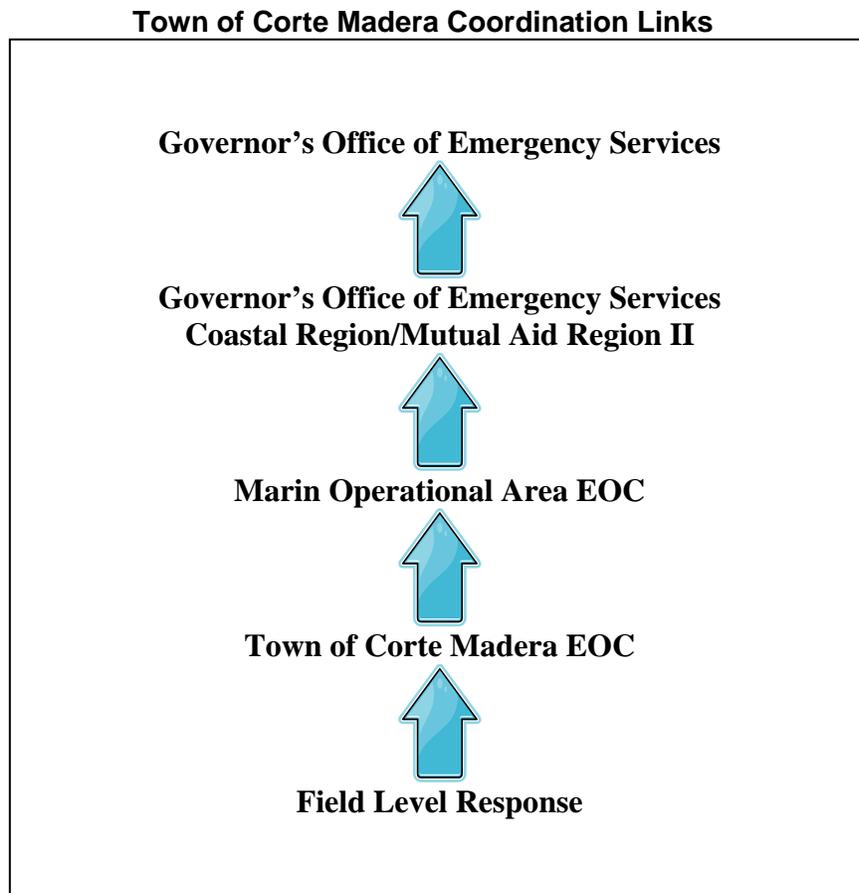
## EOC Coordination with Volunteer and Private Agencies

Local jurisdictions' EOCs will generally be a focal point for coordination of response activities with many non-governmental agencies and should establish communication with private and volunteer agencies providing services within their jurisdiction.

Agencies that play key roles in the response should have representatives in the EOC. If an agency supports several functions and has only one representative in the EOC, the agency representative should be located in the liaison area. If an agency is supporting one function only, its representative may be located with that functional element. Some agencies may have several personnel participating in functional elements in the EOC. For example, American Red Cross (ARC) personnel may be part of the staffing for the Care and Shelter element of the EOC.

During large events, agencies that have countywide response roles and cannot respond to numerous local jurisdictions' EOCs should be represented at the Operational Area level.

Coordination with volunteer and private agencies that do not have representatives at the EOC may be accomplished through telecommunications, liaison with community councils that represent several agencies, or involvement of agencies in special multi-agency groups on specific issues.



### **Emergency Operations Center (EOC) Management Structure**

SEMS regulations require local governments to provide five functions: Management, Operations, Planning/Intelligence, Logistics and Finance/Administration. These functions are the basis for structuring the EOC organization.

**Management** - Responsible for overall emergency policy and coordination through the joint efforts of governmental agencies and private organizations.

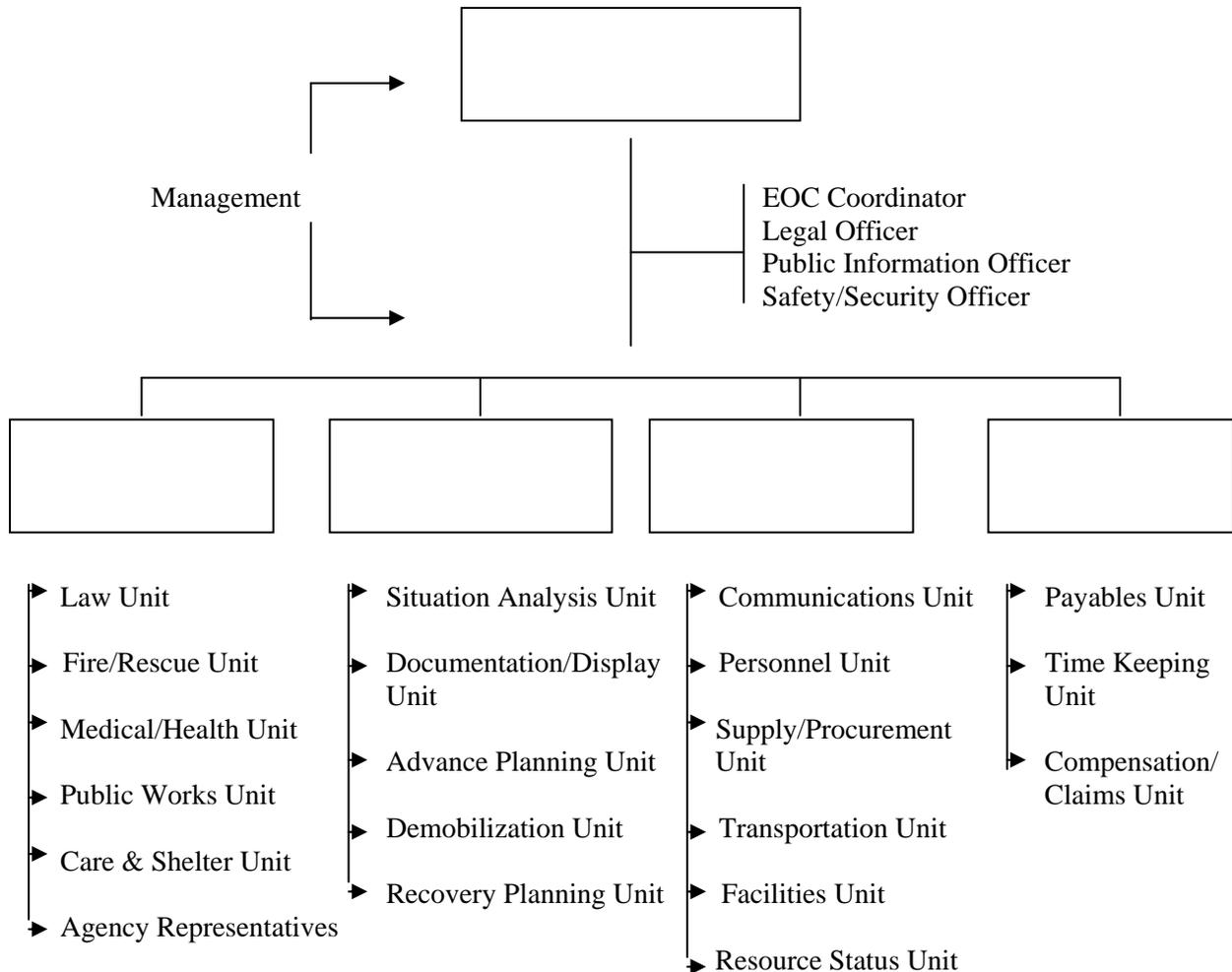
**Operations** - Responsible for coordinating all jurisdictional operations in support of emergency response through implementation of the local government's EOC Action Plan.

**Planning/Intelligence** - Responsible for collecting, evaluating and disseminating information; assist in developing the Town's EOC Action Plan, After Action Report, and Corrective Action Report, in coordination with the EOC emergency services coordinator.

**Logistics** - Responsible for supporting operations, providing facilities, services, personnel, communications, and equipment and materials.

**Finance/Administration** - Responsible for financial activities and other administrative aspects.

The EOC organization may include representatives from special districts, volunteer agencies, and private agencies with significant response roles



**EOC POSITION DESCRIPTIONS AND RESPONSIBILITIES**

**Management Section**

The Management Section is responsible for overall management and administration of the incident. Management also includes certain support staff functions required to support the EOC management function and the field command function. The following positions are established as necessary in the Management Section:

- EOC Director
- EOC Coordinator
- Legal Officer
- Public Information Officer
- Safety Security Officer

**EOC Director** - The EOC Director will be the town manager, or a designated representative of the town administration in his/her absence.

**EOC Coordinator** - The EOC Coordinator serves as a resource to and assists the EOC Director in the administration of the emergency response. When an event has a multi-agency or multi-jurisdictional response, the Emergency Operations Center Coordinator maintains contact with the Marin Operational Area EOC and provides coordination with schools, outside agency representatives, businesses, other employers, and other jurisdictions.

**Legal Officer** - The town attorney, or assistant, serves as Legal Officer. This person provides legal counsel to the EOC Director and assists in preparing a declaration of disaster.

**Public Information Officer** - The Public Information Officer is specially trained to serve as the point of contact for the media and other organizations seeking information on the emergency response.

**Safety/Security Officer** - The Safety/Security Officer's function is to monitor EOC operations and to develop measures for assuring a safe working environment. This includes attention to structural integrity, workspace set-up, activities, and entry authorization.

### **Operations Section**

The Operations Section is under the supervision of the Operations Section Chief who is in charge of all functions within the Operations Section. The Operations Section directs the Town's operational resources and coordinates mutual aid resources. In addition, the Operations Section is responsible for coordinating with the county field incident commanders. The following positions are in the Operations Section. Various Branches/Units/Groups can be added as needed.

- Operations Section Chief
- Law Unit
- Fire/Rescue Unit
- Public Works Unit
- Medical/Health Unit
- Care & Shelter Unit
- Agency Representatives

**Operations Section Chief** - The Operations Section Chief has the management responsibility of all activities directly applicable to the field emergency response. The Operations Section Chief participates in the development and execution of the Incident Action Plan.

**Law Unit** - The Law Unit coordinates the provision of warning information, evacuation procedures, traffic control, public security and order, and animal control activities. The Law Unit also assists the coroner's office in the discharge of their duties. Submits requests for mutual aid.

**Fire/Rescue Unit** - The Fire/Rescue Unit coordinates fire and rescue operations within the jurisdiction. Submits requests for mutual aid. In addition, as personnel permits, this unit supports medical treatment.

**Public Works Unit** - The Public Works Unit surveys all jurisdictional facilities, assesses damage, coordinates repairs, conducts debris removal services, and establishes priorities for restoring essential services.

**Medical/Health Unit** - The Medical/Health Unit determines the impact upon the Town population and the status of the medical and health infrastructure. Prioritizes requests from neighborhood groups.

**Care & Shelter Unit** - The Care & Shelter Unit is responsible for coordinating with volunteer agencies, the provision of food, potable water, clothing, shelter, emotional support, animal welfare, and other basic necessities of the citizens. The Care & Shelter Unit provides a central registration and inquiry service to reunite families and respond to outside welfare inquiries.

**Agency Representatives** - Agency Representatives from other jurisdictions or organizations outside the Town government serve as funnels through which requests flow to or from their agencies. They should be able to speak on behalf of their jurisdiction or agency within established policy limits.

### **Planning/Intelligence Section**

The Planning/Intelligence Section is under the supervision of the Planning Section Chief. The duties and responsibilities of the Planning Section are to gather and analyze all data regarding the incident and the assigned resources. The Planning Section maintains an incident log, EOC display maps, and charts. The Planning Section is also responsible for preparing situation reports, assessing damage, conducting planning meetings, documenting all EOC activities, and assisting in the preparation of the Action Plan. The following positions are established as necessary in the Planning Section:

- Planning Section Chief
- Situation Unit Leader
- Documentation/Display Unit
- Advanced Planning Unit
- Demobilization Unit
- Recovery Planning Unit

**Planning Section Chief** - The Section Chief has the management responsibility for the collection and processing of information and for planning activities relating to demobilization and recovery operations. The Planning Section Chief assists the EOC Director in the development of the Action Plan.

**Situation Analysis Unit** - The collection, processing, and organizing of all information about the event takes place within the Situation Analysis Unit. This unit prepares maps and disseminates information and future projections, as required.

**Documentation/Display Unit** - The Documentation/Display Unit maintains accurate up-to-date files of logs, reports, plans, and other related information. This unit provides duplication services for the EOC and maintains display boards of the current situation.

**Advance Planning Unit** - The Advance Planning Unit focuses upon potential response and recovery issues that might exist within 36 to 72 hours.

**Demobilization Unit** - The Demobilization Unit is responsible for the development of a plan that provides for the timely and orderly demobilization of the EOC.

**Recovery Planning Unit** - The Recovery Planning Unit initiates and carries out the collection and maintenance of all related information for recovery of costs from federal, state, and other jurisdictions.

### **Logistics Section**

The Logistics Section is under the supervision of the Logistics Section Chief and provides all emergency support needs. The Logistics Section orders all resources, manages volunteer personnel, and provides communications, facilities, transportation, supplies, equipment, fuel, food, and shelter. The Logistics Section is made up of the following positions:

- Logistics Section Chief
- Communications Unit
- Personnel Unit
- Supply/Procurement Unit
- Transportation Unit
- Facilities Unit
- Resource Status Unit

**Logistics Section Chief** - The Logistics Section Chief oversees all of the resource and support functions of the Logistics Section.

**Communications Unit** - The Communications Unit ensures that radio, telephone, and computer resources and services are provided to the EOC staff.

**Personnel Unit** - The Personnel Unit provides trained and volunteer personnel resources as requested, in support of the EOC and field operations. Coordinates the directions for, and the control of, convergent volunteers.

**Supply/Procurement Unit** - The Supply/Procurement Unit manages the procurement and allocation of equipment (except transportation), supplies, and materials that are not secured through mutual aid.

**Transportation Unit** - The Transportation Unit coordinates the acquisition of requested transportation resources (other than Law and Fire mutual aid vehicles) and the transportation of workers, victims, and impacted citizens.

**Facilities Unit** - The Facilities Unit is responsible for the establishment, maintenance, and demobilization of all facilities, except staging areas, needed for the jurisdiction's EOC operation.

**Resource Status Unit** - The Resource Status Unit works with the other units in the Logistics Section to collect and maintain centralized accounting of the status of all resources used in this emergency.

### **Finance/Administration Section**

The Finance/Administration Section provides for the tracking of the time worked by all emergency personnel involved in the incident, provides cost analysis and projections, and records any and all injury claims for compensation. The finance section is made up of the following positions:

- Finance Section Chief
- Purchasing Unit
- Time Keeping Unit
- Compensation/Claims Unit

**Finance Section Chief** - The Finance Section Chief is responsible for the continuity and maintenance of financial operations and records, claims, and cost analysis of the emergency.

**Purchasing Unit** - The Purchasing Unit negotiates and coordinates vendor contracts and purchase requests that exceed established purchase order limits.

**Time Keeping Unit** - The Time Keeping Unit maintains records of all on-duty personnel, including volunteers.

**Compensation and Claims Unit** - The Compensation and Claims Unit accepts, as the official agent for the Town, all damage and injury claims. This unit manages claims and conducts related investigations.

### **EMERGENCY PROCLAMATIONS**

#### **Local Emergency**

At the Town of Corte Madera level an emergency may be proclaimed by the town council or, in their absence, the town manager or his/her designee. Proclamations made by the town manager or designee must be ratified by the town council within seven (7) days of issuance, and within ten (10) days of the disaster. The council must review, at least every 14 days, the need for continuing the local emergency, and make a proclamation of termination at the earliest possible date. The town manager, or designee, acting as emergency operations manager, shall advise the Marin County Sheriff's Office of Emergency Services (OES) of the declaration. The proclamation of a Local Emergency provides the governing body with the legal authority to:

- Promulgate or suspend orders and regulations necessary to provide for the protection of life and property, including issuing orders or regulations imposing a curfew within designated boundaries.
- Exercise full power to provide mutual aid to any affected area, in accordance with local ordinances, resolutions, emergency plans, or agreements.
- Require the emergency services of any local official or employee.
- Requisition necessary personnel and materials from any local department or agency.

- Obtain vital supplies and equipment and, if required, immediately commandeer the same for public use.
- Impose penalties for violation of lawful orders.
- Conduct emergency operations without incurring legal liability for performance, or failure of performance. *Note: Article 17 of the Emergency Services Act provides for certain privileges and immunities.*

## **CONTINUITY OF GOVERNMENT**

### **Purpose**

A major disaster or an enemy attack could result in great loss of life and property, including the death or injury of key government officials. At the same time, there could be partial or complete destruction of established seats of government, and the destruction of public and private records essential to continued operations of government and industry.

In the aftermath of a major disaster, law and order must be preserved and essential government services must be maintained. Civil government accomplishes this best. To this end, it is particularly essential that local units of government continue to function.

Applicable portions of the California Government Code and the State Constitution (cited in the next paragraphs) provide authority for the continuity and preservation of state and local government.

### **Responsibilities**

Government at all levels is responsible for providing continuous, effective leadership and authority under all aspects of emergency services operations (preparedness, response, recovery, and mitigation). Under California's concept of mutual aid, local officials remain in control of their jurisdiction's emergency operations while others may provide additional resources upon request.

### **Preservation of Local Government**

Article 15 of the California Emergency Services Act (Chapter 7 of Division 1 of Title 2 of the Government Code) provides the authority, as well as the procedures to be employed, to ensure continued functioning of political subdivisions within the State of California. Article 15 provides for the succession of officers who head departments responsible for maintaining law and order, or in furnishing public services relating to health and safety.

Article 15 also outlines procedures to ensure continued functioning of political subdivisions in the event the governing body, including standby officers, is unavailable to serve.

### **Lines of Succession for Officials Charged with Discharging Emergency Responsibilities**

The first step in ensuring continuity of government is to have personnel who are authorized and prepared to carry out emergency actions for government in the event of a natural, technological, or national security disaster.

Article 15, Section 8637, of the Emergency Services Act authorizes political subdivisions, such as The Town of Corte Madera, to provide for the succession of officers (department heads) having duties related to law and order and/or health and safety.

Article 15, Section 8643, of the Emergency Services Act describes the duties of a governing body during emergencies as follows:

- Ascertain the damage to the jurisdiction and its personnel and property
- Reconstitute itself and any subdivisions
- Perform functions in preserving law and order and furnishing local service

Below is the line of succession for several departments within the town:

Service/Department	Title/Position
Administration	1 - Town Manager 2 – Assistant Town Manager 3 – Fire Chief or representative
Fire Department	1 - Fire Chief 2 - Deputy Fire Chief/Fire Marshal 3 - Battalion Chief
Twin Cities Police Authority	1 - Police Chief 2 - Captain/Administration 3 - Captain/Patrol

**Preservation of Vital Records**

In the Town of Corte Madera, the town clerk is responsible for the preservation of vital records.

Vital records are defined as those records that are essential to:

- Protect and preserve the rights and interests of individuals, governments, corporations, and other entities. Examples include vital statistics, land and tax records, license registers, and articles of incorporation.
- Conduct emergency response and recovery operations. Records of this type include utility system maps, locations of emergency supplies and equipment, emergency operations plans and procedures, personnel rosters, etc.
- Reestablish normal governmental functions and protect the rights and interests of government: constitutions and charters, statutes and ordinances, court records, official proceedings, and financial records.

Each department within the town should identify, maintain and protect its own essential records.

## **PART TWO: THREAT SUMMARY AND ASSESSMENTS**

### **GENERAL**

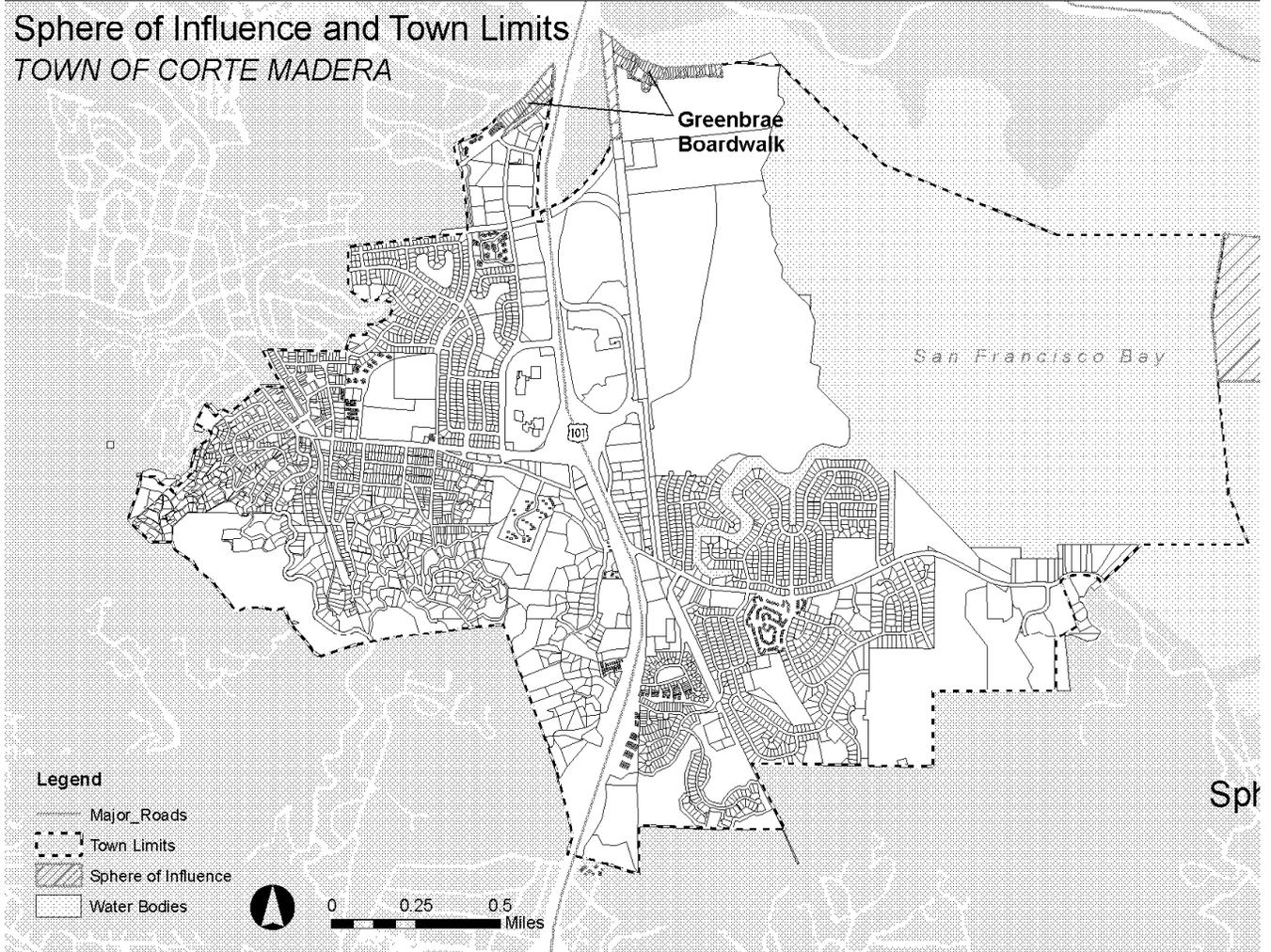
This section of the Town of Corte Madera EOP consists of a series of threat summaries based on the results of the Town of Corte Madera and Marin County Operational Area's hazard analysis. Within Corte Madera, not all threats are considered to be a critical concern. However, threats that may seem unlikely to affect Corte Madera directly will indirectly impact our community.

### **Location, Population, Transportation, and Infrastructure**

The Town of Corte Madera is located in Central Marin County, in the lower Ross Valley. Corte Madera covers an area of approximately four square miles, and serves a population of approximately 9,400 citizens. The town is mostly a residential community; however, the town is also home to many businesses and two regional shopping malls. The addition of the employees and patrons of the commercial occupancies can cause the town's population to nearly double during the daytime.

The town is bordered to the east by the San Francisco Bay, to the north and west by the City of Larkspur, and to the south by the Cities of Mill Valley and Tiburon, and an unincorporated area of Marin County, known as Alto. The town is bisected by U.S. Highway 101, which runs north to south. The main access roads are Tamalpais Drive and Paradise Drive, which run generally east/west. Town geography ranges from tidal marshes on the San Francisco Bay to wildland-urban intermix on the hillsides.

One of the major problems the Town of Corte Madera faces during any emergency is the possibility of Marin County becoming isolated from surrounding counties and any subsequent resources or help.



**POTENTIAL HAZARDS AND THREATS SUMMARY**

Cities, towns, and the unincorporated areas of Marin County are vulnerable to a wide range of threats. In recent years we have experienced several events such as earthquakes, floods, hazardous materials spills, and storms. The threat picture is further complicated by the increased use, storage, and transportation of numerous hazardous materials in various locations of our communities.

There are three broad categories of hazards: natural, technological, and man-made threats.

***Natural***

Earthquake  
Flood  
Wildland Fire  
Winter Storm  
Tsunami  
Landslide  
Drought  
Public Health Crisis

***Technological***

Hazardous Materials Incident  
Transportation Accident  
Dam Failure  
Energy Disruption  
Radiological Incident

***Manmade***

Terrorism  
Civil Disturbance  
National Security  
Emergency

## THREAT ASSESSMENT 1: EARTHQUAKE

### General Situation

Varying in type and intensity, earthquakes are perhaps the least predictable of any of the potential hazards. They may cause no real damage or the area could be heavily impacted. Often, the main earthquake is followed by a series of aftershocks. Aftershocks can be larger than the original quake and pose a significant threat to those responding to the first event.

Located within and next to Marin County are several known active and potentially active earthquake faults, including the San Andreas and the Rogers Creek/Healdsburg. (See map, page 35.)

- The San Andreas Fault enters the county on the southwestern corner and continues north along the coast. The fault lies close to many smaller coastal communities which host many tourists in the summer months. This fault is also capable of generating a near-shore tsunami (see Tsunami Hazard). During the 1906 earthquake, portions of fences and roads were offset by up to 16 feet in Tomales - even though the epicenter was in South San Francisco.
- The Rogers Creek/Healdsburg Fault runs just east of the county, with the northern part of Marin County located within ten miles apart.

A major earthquake occurring in or near these areas could result in deaths, casualties, property and environmental damage, and disruption of normal government and community services and activities. The effects could be aggravated by collateral emergencies such as fires, flooding, hazardous material spills, utility disruptions, landslides, dam failures, and transportation emergencies. The location of the epicenter, as well as the time of day and season of the year, would significantly influence the number of casualties and the amount of damage.

Such an event would exceed the response capability of Corte Madera's emergency management organization, requiring assistance from volunteer and private agencies, the Marin County Sheriff's OES, the Governor's Office of Emergency Services, and the federal government. Response efforts will be significantly hampered by the loss of communications and transportation systems.

A major effort would be needed to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities, and provide continuing care and temporary housing for affected citizens.

The economic impact of a major earthquake may also be significant. Employment may decline, businesses may suffer or even fail, tourism will drop, and a corresponding reduction in tax revenues will strain the basic financial systems in local communities. Additionally, costs for basic services and supplies can be expected to increase along with additional infrastructure maintenance, replacement, or repair expenses. Effects can last for months and years unless addressed quickly and aggressively.

## **Specific Situation**

### *Freeways and Major Highways*

The town is bisected by a major freeway, restricting east/west travel to two freeway crossings. Compromise of these travel routes due to damage would significantly impact movement of supplies and equipment necessary for emergency response. Additional impacts may be seen due to surface streets becoming overloaded with vehicles no longer able to utilize the freeway to pass through town. Traffic control will be a major factor for emergency services personnel.

### *Railroads*

Many railroad bridges are susceptible to seismic damage because of age, design, and construction. Large lengths of line are vulnerable to landslide.

### *Dam and Flood Control Channels*

Based upon current design, construction practices, and ongoing programs of review and modification, catastrophic dam failure is considered unlikely, but still possible. Strong shaking could cause some dams to overflow and cause localized flooding. Many flood control channels are expected to suffer minor damage.

### *Hazardous Sites*

Underground fuel pipelines, chemical storage tanks, and manufacturing locations may be damaged or destroyed, and the resulting leaks may constitute a considerable threat to individual areas. Additionally, the area is crossed with many high voltage lines that supply power to the majority of the area. Should they fall, roadways will be blocked and the potential for fire and shock hazards will be significant until Pacific Gas and Electric can shut them off.

### *Population Control*

In addition to caring for their own citizens, the county and cities/towns may also have to support seasonal visitors in the area at the time of the event or evacuees from other Bay Area jurisdictions. Local agencies may have to restrict access and dedicate large numbers of resources to traffic management and transportation. Such populations may place excessive demands upon any established mass care facilities or shelters. Corte Madera is subject to a large influx of people during business hours due to the number of businesses located both within our two regional shopping malls and on the Highway 101 corridor. This daily population increase will contribute to the burdens associated with movement of people and equipment and potential needs for care and shelter.

## **Damage to Vital Public Services, Systems, and Facilities**

### *Medical Facilities*

Approximately half of the beds in the county's medical facilities could be lost during a major earthquake due to the age and type of construction of some of the hospitals and rehabilitation centers in Marin. These hospitals will have services limited by damages, staff shortages, and lack of supplies. Local clinics, surgical facilities, and field treatment sites may be needed to

handle the initial demand. Marin's Mass Casualty Incident (MCI) plan will be implemented, but may be overwhelmed by the number of victims.

The most common injuries will be glass cuts on hands and feet. The most serious injuries will be crush or burn. It may be necessary to transport many injured to out-of-county facilities.

#### *Fire Operations*

Although total collapse of fire stations is not expected, possible disruption of utilities, damaged doors, and loss of power can create major problems. Numerous fires due to disruption of power and natural gas networks can be expected. Many connections to major water sources may be damaged and storage facilities would have to be relied upon. Water supplies could be inadequate or non-existent. Rescuers should expect loss of power and water, jammed doors, restricted mobility due to debris, possible loss of communications capability, and delays in reaching maximum effectiveness due to personnel shortages.

#### *Communications*

The use of telephones will be limited. Traditional and cellular systems will be affected by infrastructure failure, overloads, and loss of electrical power. Immediately following an event, numerous failures will occur, compounded by system use overloads. 80% of the telephone system is likely to be disabled for the first 24 hours.

Radio systems are expected to operate at 40% effectiveness the first 12 hours following an earthquake, increase to 50% for the second 12 hours, then decline to approximately 40% within 36 hours. A major issue will be batteries for portable radios.

Equipment reliant on microwave will experience loss of power. Damage to antennas and loss of alignment will reduce the equipment effectiveness to 30% or less.

#### *Electrical Power*

Extra-high-voltage transmission equipment is generally the most susceptible component of the electrical system. Transmission lines are especially vulnerable in Marin due to the rugged and remote terrain. Generating plants usually fare better but could also fail. Up to 60% of the system load may be interrupted immediately.

Repairs may require physically clearing roadways, bringing in special equipment, and safeguarding against aftershocks and other hazards. Close coordination is required with regional and local utility representatives. Power restoration may take days or even weeks.

#### *Natural Gas*

Damage to natural gas facilities serving Marin's communities will consist primarily of isolated breaks in major transmission lines. Breaks in mains and individual service connections within the distribution system will be significant. Leaks pose a fire threat in these susceptible areas of intense ground shaking and/or poor ground near the shoreline. Breaks in the system will affect the most developed portions of the county and restoration could be significantly delayed.

*Water*

Primary water sources may be incapacitated due to damage to the chlorine treatment stations and/or the pipelines that distribute potable water.

Priority for water distribution will go to fire suppression, life support, medical facilities, decontamination, and shelter operations. This may result in significant rationing. The use of surface-laid pipes and water tanker trucks to maintain a minimal supply to some areas will almost certainly be required.

The three major reservoirs within Marin include Soulajule, Nicasio, and Bon Tempe. There are also a host of smaller reservoirs. The supply lines are easily affected during winter storms and should be considered likely to fail during a major earthquake.

*Sanitation Systems*

These systems will be generally affected in the same manner and degree as potable water. However, there is limited storage capacity in the wastewater plants. This could result in releases of minimally treated or even untreated sewage. Damaged or un-powered pumping stations and sewer line breaks may result in small spills of untreated sewage. Household sewer connections may break and plug.

Earthquake Faults



## **THREAT ASSESSMENT 2: FLOOD**

### **General Situation**

Floods are generally classed as either slow-rise or flash floods. Slow-rise floods may be preceded by a warning time measured in hours or days. Evacuation and sandbagging for a slow-rise flood may lessen flood-related damage. Conversely, flash floods are the most difficult to prepare for, due to the extremely short warning time, if any is given at all. Flash flood warnings usually require immediate evacuation within the hour.

The National Weather Service issues flash flood watches and warnings. A flash flood “watch” is issued when flash flooding is possible within the designated watch area – all persons should be alert. A flash flood “warning” is issued when a flash flood has been reported or is imminent – all persons should take necessary precautions.

No area is immune to flash floods. In small streams, especially near the headwaters of river basins, water levels may rise quickly in heavy rainstorms, and flash floods can begin before the rains stop. There is little time between the detection of flood conditions and the arrival of the flood crest. Swift action is essential to protect life and property.

All low-lying areas, both on the bay shore and inland, are subject to flood conditions. Urban development in flood plain areas is often subject to seasonal inundation. The flood plain is a natural extension of any waterway, although infrequently used. Storm water runoff, when exceeding the capabilities of the physical channel characteristics of a stream, results in the natural flooding of a localized area, inundating vehicles and causing considerable damage to residential and industrial properties located near stream and drainage channels.

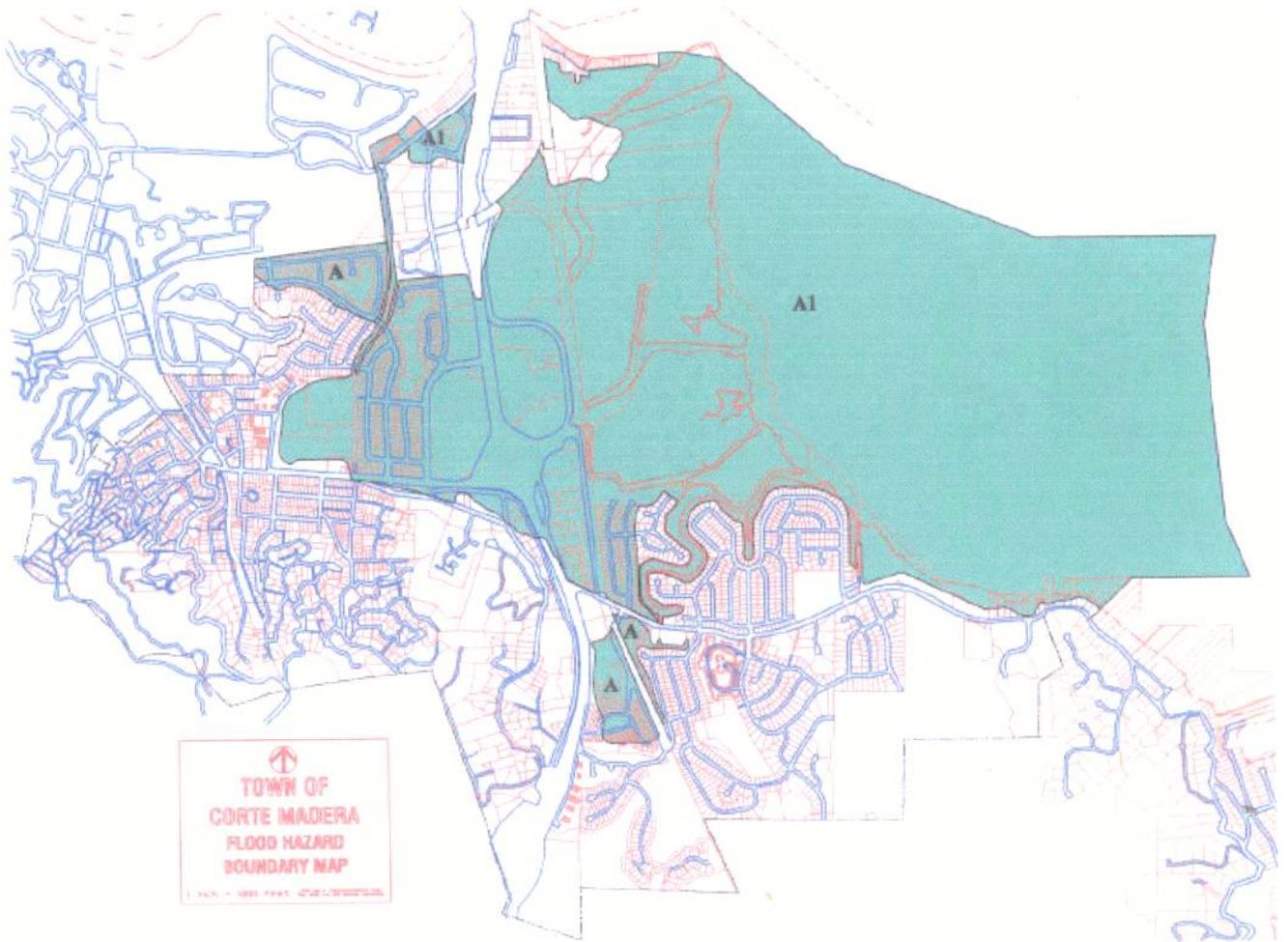
Once flooding begins, personnel will be needed to assist in rescuing persons trapped by flood water, securing utilities, evacuating residents, moving equipment, cordoning off flooded areas, and controlling traffic. These actions may overtax local agencies, and additional personnel and resources may be required.

### **Specific Situation**

The degree of flooding in Corte Madera depends upon the topography, vegetation, the duration and the intensity of rain, and consequent storm water runoff. Many developed areas are located in flood plains. (See map, page 37.) The Town has experienced floods in these areas and has taken measures to rectify these problems. But the measures do not take into account a 500-year flood, only a 100-year event.

Winter storms can generate heavy wave action along the coast, which, either by itself or when combined with high tides and/or high winds, can cause localized flooding in low-lying bay shore areas.

Flood Boundary Map  
(100 year flood)



## **THREAT ASSESSMENT 3: WILDLAND FIRE**

### **General Situation**

Wildland fire hazards exist in varying degrees over approximately 50% of Corte Madera. The fire season generally lasts from five to six months. The wildland fire hazard is caused by a combination of factors, including rugged terrain, highly flammable vegetation and forest, long summers, and human activity.

There are several areas in the county that contain heavy fuel loads. Many homes have been built on steep slopes with vegetation in close proximity. These slopes are often steep, located in rugged terrain, and have very few access routes. The onset of sudden oak death has significantly increased the number of dead or weakened trees in most areas.

In several areas, an “urban interface” fire hazard is created as older neighborhoods directly border wild lands, parks, or forests. These areas often have mature vegetation and large tree canopies which could cause the fire to spread quickly.

### **Specific Situation**

#### *Winds*

The eastern portion of the town is heavily influenced by the San Francisco Bay in terms of local climate. Diurnal winds are commonly produced by temperature differences over the bay waters and the land. The western portion of the town has ridge-tops that extend to elevations above 1,000 feet, and are therefore subject to increased winds.

#### *Topography*

The topography in Corte Madera is typical of the mountains in the Coastal Range. This creates an opportunity for a wildland fire to spread uphill in many directions, making it extremely difficult for the firefighters to control a fire in these areas. This is made more difficult when trying to protect structures. The higher density of homes and population further complicates firefighting efforts.

A majority of the identified fire hazard areas within the town present a northern aspect, and typically support greener vegetation and lower humidity; however, during the summer and fall months the county is subject to two or three “off shore” wind events that will cause winds and humidity levels that produce an extreme fire hazard in these areas.

#### *Fire Causes*

People, and their activities, may cause wildland fires. Since the heaviest concentrations of people are found along Highway 101, most fires start there. Use of equipment, people playing with fire, arson, off-road vehicles, mowing, and debris burning are among the most common causes of wildland fires. Trees growing into power lines have been a frequent cause of large and damaging fires. Lightning strikes can spark many fires simultaneously in widely separated areas. Many of these fires may smolder for days before becoming very active.

*Wildland Fire in Combination with Other Threats*

The fire hazard can be significantly affected by other hazards such as earthquake, drought, or sudden oak death. One worst-case scenario could involve a major earthquake during fire season. Broken gas lines or downed electrical wires could spark multiple fires. Firefighters would be hampered by disrupted communications, impassible roads, and the need to perform rescue/medical operations.

*Assets at Risk*

Numerous factors affect how vulnerable a structure is to a wildland fire ignition. Roof composition, siding material, construction type and materials, slope, fire-resistant vegetation, and defensible space are some general variables that affect structure survivability. There are heavy fuel loads, especially in watershed areas, unaffected by fire for many years. Many homes are built on slopes, with vegetation in close proximity. These slopes are often steep, with narrow, twisting streets and many dead ends, which present difficulties for emergency equipment access and evacuation procedures. In ridge-top areas, water supplies can be rapidly depleted, hampering fire control efforts.

**THREAT ASSESSMENT 4: WINTER STORM****General Situation**

In recent years, winter storms in California have grown increasingly intense and longer-lasting. Flash floods, mudslides, high coastal surf, coastal erosion, stream and creek flooding, snowstorms, and avalanches have all recently occurred. Especially noteworthy are the tropical storms that are blown into California on a wind current called the "Pineapple Express." From the central Pacific, warm storm fronts move quickly and directly northwest, picking up energy and pulling moisture from the ocean as they travel. Once they come ashore and are forced to rise over the coastal mountains, they cool and begin to drop their moisture.

**Specific Situation**

Corte Madera has experienced the impacts of winter storms, most notably in 1982, 1997, and 1998. These experiences have demonstrated the variety of potential hazards to the community. Winter storms can cause any combination of destruction, ranging from floods to landslides, disruption of public utilities and transportation routes, or direct injuries or structural damage due to high winds or falling trees. Expected impacts are dependent on the nature and severity of the storm.

## **THREAT ASSESSMENT 5: TSUNAMI**

### **General Situation**

A tsunami is a series of traveling ocean waves generated by earthquake or underwater landslides. As the tsunami crosses the deep ocean, its length from crest to crest may be one hundred miles or more, its height from the bottom of the wave to the crest only a few feet. It cannot be felt aboard ships in deep water and cannot be seen from the air, but in deep water, tsunami waves may reach forward speeds exceeding 600 miles per hour.

As the tsunami enters the shallow water of coastlines in its path, the velocity of its waves diminishes and wave height increases. It is in these shallow waters that tsunamis become a threat to life and property, as they can crest to heights of more than 100 feet, and strike with devastating force. This danger is not over until the entire wave series has passed. All tsunamis, like hurricanes, are potentially dangerous, even though they may not damage every coastline they strike. At present, there is no way to determine, in advance, the amplitude or size of tsunamis in specific locations. A small tsunami at one beach can be a giant one a few miles away.

Tsunamis may also be generated by earthquakes or underwater landslides just off shore. These “near-shore tsunamis” can also be very large but may arrive with little or no warning. In addition to the initial event, additional – and even larger – waves may continue to arrive for hours.

### *Damage*

The great waves of a tsunami may crush buildings, smash vehicles and boats, uproot trees, and disrupt vital public services, systems, and facilities. The effects may be aggravated by the secondary effects of fire. Efforts may be required to remove debris and clear roadways, reestablish public services and utilities, and provide temporary housing for displaced persons.

### *Evacuation*

It is essential to evacuate persons in low-lying coastal areas and around the rims of bays and harbors, for these areas consistently sustain the greatest damage by tsunamis. Potential danger exists for all areas within one mile of the coast and less than 50 feet above sea level for tsunamis of distant origin, and for all areas within one mile of the coast and less than 100 feet above sea level for tsunamis of local origin.

### *Tsunami Warning System*

The National Oceanic and Atmospheric Administration (NOAA) maintains the international Tsunami Warning System. The occurrence of a major earthquake anywhere in the Pacific Ocean area brings an immediate response from the system.

### *Tsunami Watch*

When an earthquake of sufficient magnitude to generate a tsunami occurs, Tsunami Warning System staff determines the location of the earthquake epicenter. If the epicenter is under or near the ocean, a tsunami is possible. The warning system issues a TSUNAMI WATCH, which

tells recipients that an earthquake has occurred, its location, and that the possibility of a tsunami exists. A TSUNAMI WATCH constitutes the system's first alerting action.

**Specific Hazard**

Although Corte Madera does not have a direct exposure to ocean waters, there remains a threat from tsunami due to the “bathtub” effect on the waters of the San Francisco Bay. This effect, caused by the atypical draining and filling of the bay due to the effects of tsunami waves, may cause a sloshing effect that can create water swells on the bay that exceed the heights of levees and other tidal barriers. The result of this would lead to flooding of low-lying areas, similar to a winter storm related slow rise flood, but much more rapid and less predictable.

## **THREAT ASSESSMENT 6: LANDSLIDE**

### **General Situation**

Landslides include all movements of soil, rock, or debris as a result of falling, sliding, or flowing. Landslides are categorized according to the types of motion and material involved. They can be directly caused by earthquakes or be completely independent of them.

Falls describe the sudden movement of material from vertical or near-vertical slopes, and are generally labeled by the type or material displaced, e.g., soil fall, rock fall.

Slides refer to movements in which the material moves more or less as a unit along recognizable shear surfaces. If the shear surface is concave, the slide movement will be rotational, and is denoted by the term "slump." If the shear surface is flat, the term "slide" is used alone.

Flows describe the movement of material in which small-scale movements, rather than massive sliding, is the dominant mechanism of transport. Flows are described by the type of material involved and the rate at which it moves, e.g., debris flow, mudflow.

Landslides can occur due to both natural and human factors. Natural factors include the cohesive strength and characteristics of the affected minerals, the orientation of joints and planes of weakness between slide material and bedrock, the steepness of slopes, seismic activity, the degree of saturation of ground materials (highly affected by rainfall), and the density of vegetation. Human factors include the creation of excessively steep and overloaded slopes, the removal of natural vegetation, and excessive water introduced into the hillside through domestic use.

Landslides will usually be associated with earthquakes or heavy rainfall. There are many identified sites within the county. Many threaten key highways. Some jurisdictions may be directly affected or simply isolated. Landslides will normally be associated with some other incident such as a winter storm or earthquake.

Landslides and debris flowing can damage or destroy buildings, block roads, sever utilities, disrupt water supplies, and injure or kill people. Damage control and emergency response operations may be seriously hampered by road closures and loss of communications. Evacuation of dangerous areas may become necessary. Extensive efforts may be needed to rescue trapped people, recover bodies, remove debris, and restore utilities and services.

### **Specific Situation**

Corte Madera lies in the California Coast Ranges and has two contrasting topographic settings: steep hills and ridges, and flat marshlands, bay plains, and mudflats. The hills and ridges of Central and Southeastern Marin are characterized by very steep slopes and defined differences in the strength and stability of the geological materials underlying the surface soils.

Landslides constitute one of the principal hazards to structures, roads, and utilities on these hillsides. A typical soil debris avalanche in Marin involves several hundred cubic yards of soil and colluvium (rock fragments, sand, etc.) that accumulate on steep slopes or at the foot of cliffs), and is the result of total saturation of a part of the regolith (mantlerock or the loose, unconsolidated material, residual or transported, that rests on the solid rock of the earth's crust)

on a hillside. During the last 20 years, they have occurred abundantly when about four inches or more of rain has fallen in ten hours or less. In other places they have occurred during normal rainfall as a result of excessive water introduced into the hillside through domestic use.

## **THREAT ASSESSMENT 7: DROUGHT**

### **General Situation**

A gradual phenomenon, drought often takes two or three consecutive winters with less than average precipitation to produce any significant impacts. California has experienced major droughts in 1912-13, 1918-20, 1923-24, 1929-34, 1947-50, 1959-61, 1976-77, and 1987-92.

Drought produces a variety of impacts that span many sectors of the economy and reach well beyond the area experiencing physical drought. Impacts are commonly referred to as direct or indirect. Reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and rationing are a few examples of direct impacts. These problems can, in turn, produce others. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues, increased crime, foreclosures on bank loans to farmers and businesses, and migration.

### **Specific Situation**

Marin County is very sensitive to the impacts of drought due to its growing population, dependence on fragile water sources, agricultural economic base, and environmental concerns.

#### *Drought of 1976-77*

The drought of 1976-77 was the worst in the state's recent history due to the driest (1977) and fourth driest (1976) years on record. Statewide, California's average annual rainfall is 200,000,000 acre-feet. In 1977, precipitation totaled only 90,000,000 acre-feet, or 45 percent of average. This drought left California with dangerously low reservoir and ground water levels. Forty-seven of the state's 58 counties declared emergencies, and economic losses totaled \$2.4 billion.

In Marin County, drought response measures included rationing or eliminating water allocations for industry, agriculture, landscaping, and fish flows. Water had to be hauled into several communities whose wells ran dry. Public education campaigns were undertaken to convince the public to use less water. Low water levels threatened to reduce water pressure in firefighting hydrant systems.

#### *Water sources*

The principal source of water for the town of Corte Madera is the from the Mt. Tamalpais watershed, through the services and facilities of the Marin Municipal Water District.

**THREAT ASSESSMENT 8: PUBLIC HEALTH CRISIS****General Situation**

One of the gravest threats to the life safety of Marin County residents and visitors is posed by biological agents that occur naturally. Bacteria and viruses continue to evolve and spread. Drug-resistant strains of these pathogens also pose serious challenges to modern medicine. A public health crisis will immediately impact the width and breadth of emergency medical services.

In order to reduce costs, the medical community has worked to increase its efficiency by reducing or closing facilities, reducing staff, and relying on just-in-time inventory systems for medical supplies. This has resulted in an indirect reduction in the capacity to handle large-scale health events and an increased reliability on crisis response systems.

Public health events are likely to impact whole regions and nations. Resources from outside Marin County may not be available. American society has not had to respond to a major health crisis in modern times. Existing concepts and response systems may be overwhelmed.

## **THREAT ASSESSMENT 9: HAZARDOUS MATERIALS INCIDENT**

### **General Situation**

A hazardous material is any substance that may be explosive, flammable, poisonous, corrosive, reactive, radioactive, or any combination thereof, because of its quantity, concentration or characteristics. Hazardous materials require special care and handling because of the threats they pose to public health, safety, and the environment. The production, transportation, and use of hazardous materials have become a normal part of society.

Accidental releases of hazardous materials can be especially damaging when they occur in highly populated areas or along transportation routes used simultaneously by commuters and hazardous materials transports. Incidents are more likely to occur along highways and railways. Fixed facilities, such as manufacturing and light industrial facilities, release hazardous materials; however, stringent safety requirements help to limit these.

Hazardous materials incidents in the urban areas of the county may require precautionary evacuations, or may have residents do shelter-in-place. Such an event may produce many victims suffering from exposure to the agent or burns and require implementation of the county's Mass Casualty Incident (MCI) Plan.

### **Specific Situation**

Corte Madera is not home to the large industrial complexes normally associated with a high incidence of hazardous material emergencies. Marin County is served by one hazardous materials team. Due to traffic congestion, it is estimated that significant out-of-county assistance may be unavailable for a period of one to three hours – especially if the incident occurs at a peak traffic time.

#### *Transportation Routes or Fixed Hazardous Materials Facilities*

Hazardous materials incidents in Corte Madera would most likely occur on the transportation routes or at fixed hazardous materials sites within the town. Hazardous materials are often moved through the area on U.S. Highway 101; however, restrictions of materials allowed to cross the Golden Gate Bridge effectively limit the transport of materials through town. Surface streets are used for the local transportation of hazardous materials. Some businesses within the town use moderately hazardous materials in their daily operations. These businesses maintain current lists of the materials in their facilities.

Corte Madera is bordered on the east by San Francisco Bay. Maritime transportation of hazardous materials on the bay presents a potential to impact the town should a hazardous materials release occur on the bay.

#### *Oil Spill*

An oil spill can be a significant hazard to Corte Madera's ecosystems, including wildlife and environmentally sensitive sites (resources at risk).

*Sewage Spills*

Sewage spills into the county's waterways or the San Francisco Bay may cause significant contamination, causing sickness to people who come in contact with those waters, as well as distressed and sick wildlife. Sewage spills are often caused by waste treatment facilities pump and alarm failures as well as human errors.

*Other Sources*

Another source of hazardous materials incidents is the illegal manufacturing of drugs in clandestine laboratories. The residue and hazardous waste from these laboratories are usually dumped illegally, posing a public health and safety hazard and a threat to the environment. In many cases, criminals will conduct their activities in the midst of residential or commercial neighborhoods to remain hidden.

## **THREAT ASSESSMENT 10: TRANSPORTATION ACCIDENTS**

A major incident involving an airplane, truck, or train could result in numerous casualties and could significantly impact Marin County's transportation systems. The ability of emergency response teams to respond and transport victims to hospitals will be affected by the time of day and traffic congestion.

A major incident on any of the primary routes would produce road closures of at least four or more hours. Extensive search and rescue operations may be required to assist trapped and injured persons. Emergency medical care and temporary shelter would be required for injured or displaced persons. Identification, movement, and temporary storage of any significant number of dead would be difficult. Families may be separated, particularly if the incident should occur during working hours. In some instances, the loss of communications and disruption of other essential services may hamper emergency operations.

Under certain circumstances, government effort would be required to remove debris and clear roadways, demolish unsafe structures, and assist in reestablishing public services. It may be necessary to provide continuing care and welfare for the affected population.

Each of these hazards could produce several secondary threats, such as a hazardous materials incident, fire, severe damage to nearby buildings or vehicles, or loss of life in either adjacent buildings or vehicles and pedestrians.

Major accidents could involve an airplane crash or trucking incident. The following assessments provide additional details unique to each type of incident:

### ***Airplane Crash***

#### **General Situation**

Often the impact of a disabled aircraft as it strikes the ground creates the potential for multiple explosions, resulting in an intense fire. Wherever the crash occurs, the resulting explosion and fires have the potential to cause injuries, fatalities, and the destruction of property. The time of day when the crash occurs may have a profound effect on the number of dead and injured. As well, an airplane crash produces profound mental health issues for survivors, surrounding residents, and emergency responders.

#### **Specific Situation**

Marin County has no commercial service airports with regularly scheduled air carrier passenger service. The Marin County Airport at Gnoson Field is a regional general aviation airport that is home to several charter companies. The county lies along the west coast air corridor, and traffic patterns for Bay Area and Sacramento airports traverse the area. The crash of a small (light) aircraft would result in obvious issues if the incident took place near heavily-populated areas. In remote areas, the rugged terrain could make access and communications difficult.

A far more significant event would be the crash of an airliner. A large area could be affected with falling parts, burning fuel, and destroyed buildings. Many state and federal agencies would respond to the scene in a very short period, and media attention would be intense.

***Trucking Incident*****General Situation**

A major truck incident that occurs in a heavily-populated industrial area or residential area can result in considerable loss of life and property. Potential hazards could be overturned tank trailers, direct impact either into a residence or industrial building, or cutting into the normal flow of traffic.

**Specific Situation**

The main transportation artery through Corte Madera is U.S. Highway 101. This route is heavily used most hours of the day, and the control of vehicular traffic in and around the affected area of a multi-casualty or hazardous materials incident would be the primary problem at any time.

In many areas there are few good alternate routes. During commute hours, the problem would be severely compounded. It would be necessary to expedite the flow of essential emergency response vehicles through the area and divert non-essential traffic. In a major accident, it is not uncommon for these roads to close for most of a day to support rescue, recovery, and accident investigation activities.

In a major disaster, increased reliance on goods and equipment being trucked into the county and into Corte Madera, combined with restricted or damaged roads, could result in a greater chance for a major accident.

## **THREAT ASSESSMENT 11: DAM FAILURE**

### **General Situation**

Dam failure is the collapse or failure of an impoundment that causes significant downstream flooding. The most common cause of dam failure is overtopping where the water behind the dam flows over the face of the dam and erodes the structure. This is most common during heavy rainstorms.

The collapse and structural failure of a dam may be caused by a severe storm, earthquakes, internal erosion of piping, and foundation leakage. Seismic activity may also cause inundation by the action of a seismically-induced wave that overtops the dam without causing failure of the dam, but still floods downstream. Landslides flowing into a lake may also cause a dam to fail or overflow.

The principle consequences of dam failure are injury, loss of life, and significant downstream property damage.

### **Specific Situation**

Dam inundation, or flooding which occurs as a result of structural failure of a dam, poses a serious threat to specific areas within Corte Madera. Although there is no history of major dam failure in the area, any failure could have serious impacts. Marin County's dams include: Alpine, Bon Tempe, Docini, Hagmaier North, Lagunitas, Lower Turney, Nicasio, Novato Creek, Peters, Phoenix Lake, Soulajule, Vonsen, and Walker Creek.

Failure of county dams, even during a catastrophic event such as a severe earthquake, is considered very unlikely. Owing to the method of construction of these dams, they have performed well in earthquakes and failure is not expected to occur. Detailed dam maps are available at the Marin County Planning and Building Department.

The portions of the town along the Corte Madera Creek are within the inundation area identified regarding a failure of the Phoenix Lake Dam.

## **THREAT ASSESSMENT 12: ENERGY DISRUPTION**

### **General Situation**

Modern society has increasingly grown dependent on technologies which use various sources of energy. Events in the last 30 years have underscored the major impacts that a disruption in the energy supply can have:

- The major Arab oil embargo in 1973 led to significant economic and political changes, including increased domestic oil production, additional investment in alternative energy sources, inflation, and a marked reduction in the Gross National Product.
- The California electrical shortages of 2001 resulted in the use of rotating electrical outages, also known as rolling blackouts. This crisis created a great deal of confusion, loss of power, increased utility rates, and negatively impacted the state budget.

#### *Fossil Fuels*

This includes natural gas, oil, and gasoline. Disruptions in the supply of these resources would immediately cause serious problems in transportation, electrical generation, business, communications, and would cause prices for most goods and services to rise dramatically.

#### *Electrical Power*

A power failure is any interruption or loss of electrical service due to disruption of power generation or transmission caused by an accident, sabotage, natural hazard, equipment failure, or fuel shortage. These interruptions can last anywhere from a few seconds to several days. Power failures are considered significant problems only if the local emergency management organization is required to coordinate the provision of food, water, heating, etc. as a result. Power failures are common when severe weather and winter storm activity occur. Critical systems, including telecommunications, will fail unless provided with alternate or redundant power sources.

### **Specific Situation**

Marin County does not manufacture any petroleum products. The majority of these products are imported from Bay Area refineries. A natural gas pipeline feeds the majority of the population along the U.S. Highway 101 corridor.

## **THREAT ASSESSMENT 13: RADIOLOGICAL INCIDENT**

### **General Situation**

Depending upon the type, location, and quantity released, nuclear (radiological) materials can damage human health, the environment, and property. Such an accidental release is extremely rare. Commercial nuclear plants began generating power in 1957. The United States has had only one major incident that occurred at the Three Mile Island facility near Harrisburg, Pennsylvania in 1979. Other minor incidents have occurred, but these have been infrequent and have caused few off-site consequences.

Common sources of radiological materials include those used in medical procedures, research, industrial production, and construction.

It is important to note that a radiological event differs from a regular hazardous materials spill in that the affected area could be large, radioactivity is difficult to detect, specialized equipment is required to pinpoint sources, and cleanup may require tremendous resources. Long-term effects may be difficult to determine. Public perception will play a critical role in the incident. Media coverage of such an event will be massive. Federal agencies will play a key role in managing response and recovery efforts.

Generally, shielding, limited exposure time, and increased distance from the source are the keys to effective mitigation and response.

### **Specific Situation**

Corte Madera is a suburban area, removed from the multiple risks of nuclear (radiological) materials emergencies normally associated with a more urban environment. Only a few sites (medical facilities) use such materials – and these are considered a relatively low-level threat. As U.S. Highway 101 is the primary north/south corridor for California's north coast, some industrial and medical grade radiological materials are transported on this route.

## THREAT ASSESSMENT 14: TERRORISM

### General Situation

The Federal Bureau of Investigation (FBI) defines terrorism as “the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives.”

Since the events of September 11, 2001, a significant increase in the assessment and preparation for terrorism has been a national priority.

Terrorism can be state-sponsored or the outgrowth of a frustrated, extremist fringe of polarized and/or minority groups of people. Extremists have a different concept of morality than the mainstream society. Terrorist groups include:

- Ethnic separatists and political refugees
- Leftwing radical organizations
- Rightwing racists
- Anti-authority survivalist groups
- Extremist issue-oriented groups, such as animal rights, environmental, religious, and anti-abortionists

Events could typically be expected in urban areas near public gatherings, government facilities, or highly visible areas, but no one area is less likely to be a target than any other. Communities are vulnerable to terrorist incidents and most have high visibility and vulnerable targets. These facilities, sites, systems, and special events in the community are usually located near routes with high transportation access. Examples include:

- Government office buildings, courthouses, schools, hospitals, and shopping centers
- Dams, water supplies, power distribution systems
- Military installations
- Railheads, interstate highways, tunnels, airports, ferries, bridges, seaports, pipelines
- Recreational facilities such as stadiums, theaters, parks, casinos, concert halls
- Financial institutions and banks
- Sites of historical and symbolic significance
- Scientific research facilities, academic institutions, museums
- Telecommunications, newspapers, radio and television stations
- Chemical, industrial, and petroleum plants, business offices, and convention centers
- Law, fire, emergency medical services facilities, and operations centers
- Special events, parades, religious services, festivals, celebrations
- Family planning facilities

### *Weapons of Mass Destruction*

Experts generally agree that there are five categories Weapons of Mass Destruction (WMD) which terrorists could use: Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE). It is important to note that developing and properly employing such weapons is very difficult – but not impossible. Each category of weapon is discussed below:

- Chemical agents are compounds with unique chemical properties that can produce

lethal or damaging effects in humans, animals, and plants. Chemical agents can exist as solids, liquids, or gases, depending on temperature and pressure. Most chemical agents are liquid and can be introduced into the unprotected population relatively easily using aerosol generators, explosive devices, breaking containers, or other forms of covert dissemination. Dispersed as an aerosol, chemical agents have their greatest potential for inflicting mass casualties.

- Biological agents pose a serious threat because of their accessible nature and the rapid manner in which they spread. These agents are disseminated by the use of aerosols, contaminated food or water supplies, direct skin contact, or injection. Several biological agents that could be adapted for use by terrorists include anthrax, tularemia (rabbit fever), cholera, the plague, botulism, and pandemic flu. A biological incident will most likely be first recognized in the hospital emergency room, medical examiner's office, or within the public health community long after the terrorist attack. The consequences of such an attack will present communities with an unprecedented requirement to provide mass protective treatment to exposed populations, mass patient care, mass fatality management, and environmental health clean-up procedures and plans.
- A radiological weapon involves the detonation of a large conventional explosive that incorporates nuclear material or detonation of an explosive in close proximity to nuclear materials in use, storage, or transit.
- A nuclear threat is the use or threatened detonation of a nuclear bomb or device. At present, there is no known instance in which any non-governmental entity has been able to obtain or produce a nuclear weapon.
- Explosive incidents account for 70 percent of all terrorist attacks worldwide. Bombs are the terrorist's weapon of choice. The Internet and local libraries provide ample information on the design and construction of explosive devices. The FBI reported that 3,163 bombing incidents occurred in the United States in 1994; 77 percent were due to explosives. Residential properties are the bombers' most common targets.

### *Cyber terrorism*

In addition to WMD attacks, cyber terrorism is a relatively new phenomenon, used to potentially disrupt our society and exploit our increasing reliance on computers and telecommunication networks. Cyber terrorism threatens the electronic infrastructure supporting the social, health, and economic well being of our communities. Interlinked computer networks regulate the flow of power, water, financial services, medical care, telecommunication networks, and transportation systems.

### **Specific Situation**

The San Francisco Bay Area contains many high-profile sites and buildings that are considered potential terrorist targets. Therefore, even though Marin County and Corte Madera may not suffer such an attack, it is likely that it will be asked to provide support to this major metropolitan area that has been impacted. Another consideration is the potential for large numbers of the public to move from the impacted area due to actual or perceived dangers.

The federal and state response to terrorist activities has been intense since the attack of September 11, 2001. Emergency management actions have centered on terrorist threat assessment, planning, grant administration, and training. Detailed terrorism threat assessments for the county and the State of California have been completed and are considered confidential.

**THREAT ASSESSMENT 15: CIVIL DISTURBANCE**

Civil disturbance includes incidents that are intended to disrupt a community to the degree that law enforcement intervention is required to maintain public safety. Civil disturbances are generally associated with controversial political, judicial, or economic issues and/or events. The effects of civil disturbances could include traffic congestion or gridlock, illegal assemblies, disruption of utility service, property damage, injuries, and potential loss of life. This is in contrast to civil disobedience.

The County of Marin has experienced minor civil disturbances in several of its cities and in the unincorporated areas. In recent years, high-profile speakers with political, social, and environmental backgrounds have been invited to speak at venues within Corte Madera. In the future, protest events tied to world economic and environmental issues could potentially produce a situation for larger civil disturbances to occur within our town.

## **THREAT ASSESSMENT 16: NATIONAL SECURITY EMERGENCY**

A national defense emergency will normally be announced by the federal government; however, unless there is a sudden, unprovoked attack, there should be some time available for planning and initiation of evacuation procedures. It is not the duty of civil authorities to fight the war, but rather to control and care for the local population. Local and state authorities under a "State of War" have not been exercised since World War II.

Potential impacts of a national security emergency include:

### *Military Call-up and Activity*

A major national defense emergency would require the activation of the military reserve forces and the National Guard. Members of those organizations would be called to duty. Their service in the federal government takes precedence over local authority. There would be no trained replacement personnel immediately available. This would affect government agencies at all levels and organizational restructuring might be necessary. There are very few military installations in the region which would be deploying troops. However, movement through the area could place a great deal of strain on major highways and local resources.

### *Civilian Activity*

The civilian population may also be immediately affected by a declaration of a national emergency. Most certainly there would be a significant portion of the population that would try to evacuate the area in advance. This could produce some civil disobedience. Employee safety could become a significant concern.

### *Outright War or Attack*

An attack upon the United States (either conventional or nuclear) is extremely unlikely. The potential for such an event, however, does exist. Although the chances of a massive nuclear strike on the U.S. have greatly diminished, several countries throughout the world have developed, or are seeking to develop, the capability of deploying nuclear weapons, either on a tactical basis or a strategic one. Additionally, the possibility exists that a terrorist organization might acquire the capability of creating a small nuclear detonation. A single nuclear detonation in the United States would likely produce fallout affecting an area many times greater than that of the blast itself.

In the event of a conflict involving the major world powers, an attack on the Bay Area would be an almost certainty. In most probability, the attack would be from missiles with nuclear warheads. An attack on the coast by amphibious forces is unlikely. This is normally the responsibility of the federal agencies; however, protection of municipal facilities and resources would be an important consideration.

There are several "strategic" targets in the Bay Area which are/would be targeted for a nuclear strike. In addition to the military installations, defense production and communications-related civilian activities may be designated as targets. Destruction would be complete in many areas and all normal sources of power and water would cease to exist. The surviving population would flee the area by any means possible. Areas not directly affected by the blast of weapons would suffer the effects of radioactive particulate dispersed into the atmosphere.

In the event of a massive attack, there would be no help from outside agencies for a prolonged period. It would be the responsibility of law enforcement to restore order and the job of the entire government to reassert its authority and reestablish any systems possible to aid in the placement and care of refugees as well as local citizens.

## PART THREE: REFERENCES AND ACRONYMS

### OPERATIONAL AREA ANNEXES

Available reference material includes annexes that supplement the Marin County Operational Area EOP. These documents provide information or additional detail for hazards or response functions. The list below indicates current Marin County annexes. Additional annexes will be developed. All current annexes are available to all agencies within the Marin County Operational Area.

- |  |                |
|--|----------------|
| • EOP Post-Disaster Housing Annex                | December 2003  |
| • EOP Care and Shelter Annex                     | March 2005     |
| • EOP Spontaneous Volunteer Annex                | September 2005 |
| • EOP Tsunami Annex                              | January 2007   |
| • EOP Vulnerable/Special Needs Populations Annex | June 2007      |
| • EOP Medical/Health Annex                       | November 2006  |
| • EOP Oil Spill Annex (Draft)                    | April 2006     |

### AUTHORITIES AND REFERENCES

The California Emergency Services Act (Chapter 7, Division 1 of Title 2 of the Government Code), hereafter referred to as "The Act," provides the basic authorities for conducting emergency operations following a proclamation of Local Emergency, State of Emergency, or State of War Emergency by the governor and/or appropriate local authorities, consistent with the provisions of The Act.

The Standardized Emergency Management System (SEMS) Regulations (Chapter 1, Division 2 of Title 19 of the California Code of Regulations), establishes SEMS to provide an effective response to multi-agency and multi-jurisdiction emergencies in California.

Homeland Security Presidential Directive (HSPD-5) gives the secretary of homeland security the responsibility of developing and administering the National Incident Management System (NIMS).

The California Emergency Plan, which is promulgated by the governor, is published in accordance with The Act and provides overall statewide authorities and responsibilities, and describes the functions and operations of government at all levels during extraordinary emergencies, including wartime. Section 8568 of The Act states, in part, that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." Local emergency plans are, therefore, considered to be extensions of the California Emergency Plan.

The National Response Plan (NRP) establishes a single, comprehensive approach to domestic incident management to prevent, prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The NRP is an all-hazards plan built on the template of the National Incident Management System (NIMS). The NRP can be partially or fully implemented in the context of a threat, anticipation of a significant event, or in response to an incident requiring a coordinated federal response. The NRP applies to all incidents requiring a coordinated federal response as part of an appropriate combination of federal, state, local,

tribal, private-sector, and nongovernmental entities. The NRP is always in effect; however, the implementation of NRP coordination mechanisms is flexible and scalable.

The California Civil and Government Codes contain several references to liability release (Good Samaritan Act) for those providing emergency services.

### **Federal**

- Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Public Law 93-288), as amended
- Federal Civil Defense Act of 1950 (Public Law 920), as amended
- Federal Response Plan (FEMA)
- Federal departments and agencies HSPD-5 requirements for adoption of NIMS by state and local organizations
- NRT-1, Hazardous Materials Emergency Planning Guide and NRT-1A Plan Review Guide (Environmental Protection Agency's National Response Team)

### **State**

- Standardized Emergency Management System (SEMS) Regulations (Chapter 1, Division 2 of Title 19 of the California Code of Regulations) and (Government Code Section 8607(a))
- Standardized Emergency Management System (SEMS) Guidelines
- California Emergency Services Act (Chapter 7, Division 1 of Title 2 of the Government Code)
- "Good Samaritan" Liability
- California Emergency Plan
- California Natural Disaster Assistance Act (Chapter 7.5, Division 1 of Title 2 of the Government Code)
- Preservation of Local Government, Article 15 of the California Emergency Services Act (Chapter 7, Division 1 of Title 2 of the Government Code)
- Temporary County Seats, Section 23600, Article 1 of Chapter 4 of Division 1 of Title 3 of the Government Code
- California Hazardous Materials Incident Contingency Plan
- California Health and Safety Code, Division 20, Chapter 6.5, Sections 25115 and 25117, Chapter 6.95, Sections 2550 et seq., Chapter 7, Sections 25600 through 25610, dealing with hazardous materials
- Orders and regulations which may be selectively promulgated by the governor during a State of Emergency
- Orders and regulations promulgated by the governor to take effect upon the existence of a State of War Emergency
- California Master Mutual Aid Agreement
- California Law Enforcement Mutual Aid Plan
- California Fire and Rescue Operations Plan
- Judicial System, Article VI, Sections 1, 4, 5, and 10, of the Constitution of California
- Local Government, Article XI, of the Constitution of California

## Americans with Disabilities Act

All operations and facilities involved in the disaster response activities shall take special note of the Americans with Disabilities Act (ADA). Appropriate efforts shall be made to ensure that necessary considerations are given to accommodate victims with disabilities. Public warning, emergency communications, transportation, and sheltering are areas that require special attention.

## ACRONYMS

AAR	After Action Report
ACS	Auxiliary Communications Service
ADA	Americans with Disabilities Act
ARC	American Red Cross
C&S	Care and Shelter
CAD	Computer Aided Dispatch
CalFire	California Fire
CalTrans	California Department of Transportation
CAO	Chief Administrative Officer
CAP	Corrective Action Plan
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive
CDF	California Department of Fire
CERT	Community Emergency Response Team
CHP	California Highway Patrol
CVNL	Center for Volunteer and Nonprofit Leadership
DC3	Disaster & Citizens Corps Council
DPW	Department of Public Works
EAS	Emergency Alert System
EDIS	Emergency Digital Information System
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan/Emergency Operating Procedures
EPA	Environmental Protection Agency
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
HEART	Homeowner Emergency Action Response Team
HSPD-5	Homeland Security Presidential Directive-5
ICS	Incident Command System
JIC	Joint Information Center
MACC	Multi-Agency Coordination Center
MCI	Mass Casualty Incident
MEANS	Marin Emergency Automated Notification System
MHOAC	Medical Health Operational Area Coordinator
MMRC	Marin Medical Reserve Corps
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRP	National Response Plan
OA	Operational Area
OASIS	Operational Area Satellite Information System
OHS	Office of Homeland Security
PHO	Public Health Officer
PIO	Public Information Officer
RACES	Radio Amateur Civil Emergency Services
REOC	Regional Emergency Operations Center

RIMS	Response Information Management System
SEMS	Standardized Emergency Management System
SOC	State Operations Center
SOP	Standard Operating Procedures
TSA	The Salvation Army
TENS	Telephone Emergency Notification System
WMD	Weapons of Mass Destruction